VOL. LXXVIII PART ONE

JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY

JANUARY 1953

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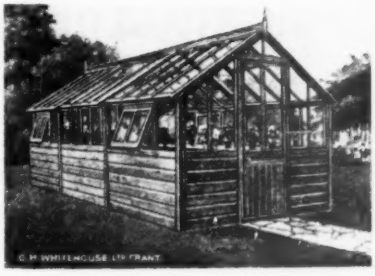

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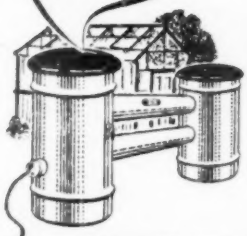

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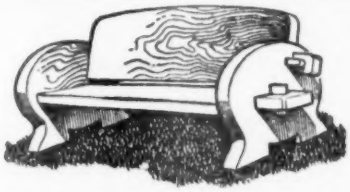

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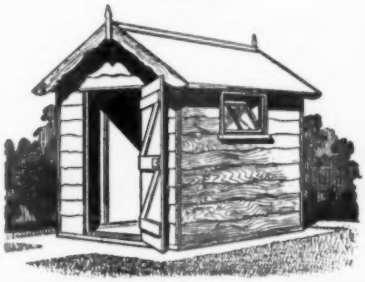

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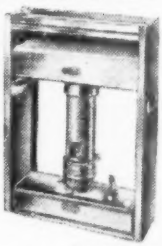

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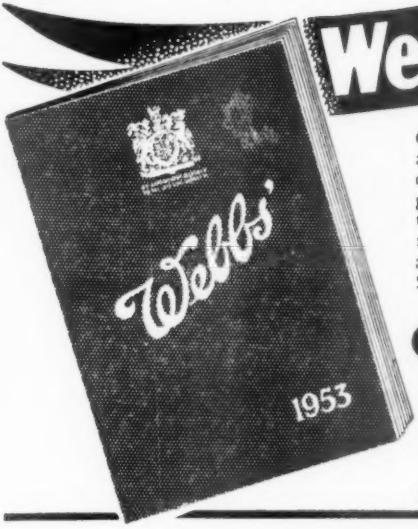

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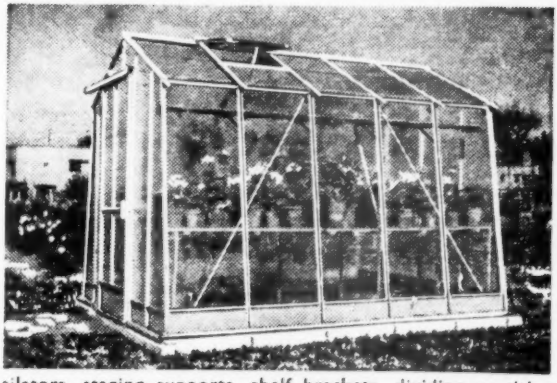

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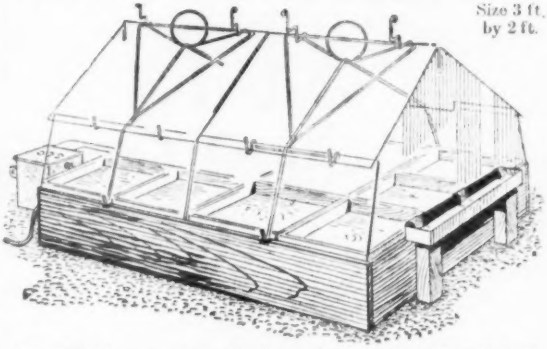

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JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY

Vol. LXXVIII Part 1

January 1953

THE SECRETARY'S PAGE

ANNOUNCEMENTS—JANUARY AND FEBRUARY

Shows

TUESDAY, January 20 12 NOON to 6 P.M. WEDNESDAY, January 21 10 A.M. to 5 P.M.	Fortnightly Show.
TUESDAY, February 3 12 NOON to 6 P.M. WEDNESDAY, February 4 10 A.M. to 5 P.M.	Fortnightly Show.
TUESDAY, February 17 12 NOON to 6 P.M. WEDNESDAY, February 18 10 A.M. to 5 P.M.	Fortnightly Show. Annual General Meeting at 3 P.M. on February 17.

Lectures

TUESDAY, January 20, at 3 P.M. "A Plant Hunting Holiday in the Alps" by MR. P. M. SYNGE, M.A., F.L.S.

TUESDAY, February 3, at 3 P.M. "The Lindley Library and its Treasures" by MR. W. T. STEARN, F.L.S.

Annual General Meeting—The Annual General Meeting to receive the Report of the Council for 1952 and a statement of accounts for that year will be held on Tuesday, February 17, 1953, at 3 P.M. There will also be a show on that and the following day.

Journal and Botanical Magazine Binding—Arrangements have now been made for those Fellows who so wish to have the JOURNAL bound in green cloth with the lettering and crest in gold. The cost for each volume of 12 parts will be 9*s*. 6*d*. plus 1*s*. 6*d*. for return postage and packing. Fellows may also have the *Botanical Magazine* bound in dark blue buckram with gold lettering. The cost for each volume will be 13*s*. 6*d*. plus 1*s*. 6*d*. for return postage and packing. Parts for binding should be sent, with remittance, to Messrs. Mansell (Bookbinders) Ltd., 41, Britannia Row, Essex Road, London, N.1. The parts should *not* be sent to the Offices of the Society. Inquiries for binding in special styles should also be addressed direct to Messrs. Mansell.

The Society's Examinations—Candidates who wish to enter for the Society's Examinations in Horticulture in 1953 are reminded that the closing dates for entry forms are as follows :—

General Examination in Horticulture, and General Examination in Horticulture for Juniors—Monday, January 12, 1953.

National Diploma in Horticulture—Intermediate and Final Examinations, and N.D.H. Honours—February 2, 1953.

Teachers' Diploma in School Gardening, Intermediate and Final Examinations—February 2, 1953.

NOTES FROM WISLEY

IN the past this article has been devoted to the mention of a few of the more interesting plants that are to be seen on a perambulation of the Gardens during any particular month. The plants were described in such a manner that it was possible to use the article as a guide-book to the Gardens. In the future it is intended to break away from this general discussion of the plants and instead to discuss some particular part of the Gardens or some special group of plants.

During January the plants which flower out of doors are rather limited in number, but given a few mild days a visit to the Gardens can be very interesting. One of the plant families which gives so many early garden flowers is the Hamamelidaceae, a family with a somewhat discontinuous geographical distribution in Eastern North America and in Asia with extensions into Africa and Australia. Possibly the best-known genus in this family is *Hamamelis*, a genus of some six species from whose bark Witch Hazel is prepared, and much the finest species of the genus is *Hamamelis mollis*. *Hamamelis mollis*, introduced from Central China by Messrs. Veitch in 1876, opens its bright golden yellow deliciously scented flowers in late December and continues throughout January and February. Well does it deserve the First Class Certificate which was awarded in 1918. There are many plants of this species in the Gardens but the best is in the Award of Garden Merit Collection. Also

from the nursery of Messrs. Veitch came that wonderful form of *H. mollis* known as the 'Coombe Wood form'; it has slightly larger flowers than the type with which it can be compared on Battleston Hill where the two are growing side by side.

The flowers of the variable *H. japonica*, a plant which has a very fine yellow leaf colour in the autumn, are not so sweetly scented as those of *H. mollis* but they give a greater range of colour. *H. japonica* var. *arborea*, for instance, has golden-yellow petals set in a calyx cup of deep claret; this variety is less branched and taller than the type, frequently attaining a height of 20 feet. There are several fine plants of it in the Gardens but the best is in the border which runs opposite the North end of the greenhouses. As long ago as 1881 var. *arborea* received the First Class Certificate, when exhibited by Messrs. Veitch. *H. japonica* var. *rubra*, a small plant of which is to be seen in the Wild Garden, carries dull claret-red flowers and is most attractive in the autumn when the leaves turn, first at the margin, to red and bronze. Other varieties of *H. japonica* are var. *Zuccariniana*, also an F.C.C. plant, with lemon-yellow petals, green sepals and of more erect growth than *arborea*, and var. *flavo-purpurascens* with petals suffused with red and with dark purple sepals.

Turning to the species which are natives of North America, we have *H. virginiana*, the American Witch Hazel, which is the source of Bay Rum and whose leaves and bark are reputed to have medicinal properties. This plant carries bright yellow flowers at leaf-fall and makes a shrub or small tree of up to 15 feet. Of different habit is *H. vernalis*, which forms a dense thicket of suckers but in other respects is very similar to *H. virginiana*. *H. macrophylla*, which some authorities consider to be synonymous with *H. virginiana*, has pale yellow flowers similar to those of this species but the leaves are smaller, more rounded, and have fewer lobes. A plant of *H. macrophylla*, growing in Seven Acres, was received from the Arnold Arboretum before the war and now is 5 to 6 feet high.

All these plants are perfectly hardy and grow well in a good loam either in the open or in light shade. Therefore it seems a pity that they are not more generally planted, for the taller-growing species are ideal for larger gardens and open spaces and the small-growing ones such as *H. mollis* are suitable for the small garden in either town or country, while *H. arborea* is a suitable plant for the North wall. The usual method of propagation is grafting on to seedling *H. virginiana* stock in early August.

Although not flowering during January, there are other members of this family which conveniently may be discussed now. It is noticeable that many of them are plants which produce very fine autumn leaf colours. The Eastern North American *Liquidambar styraciflua*, the Sweet Gum, makes a narrow pyramidal tree with, frequently, though by no means always, gorgeous crimson colouring in the autumn; the corky bark, especially of older trees, is a pleasing feature in winter. It likes a moist soil and does best in a slightly protected position. The Sweet

Gum can be raised either from imported seed or from layers which usually will root in one year.

Parrotia persica forms a wide-spreading tree which produces in February or earlier flowers conspicuous only by reason of their red-anthered stamens and brown bracts which give the tree a pleasing effect in the leafless state. But the main beauty of the tree lies in the crimson and golden leaves of autumn. There is a very fine plant at the North end of the greenhouses. Even less conspicuous are the dark purple flowers of *Disanthus cercidifolius*; these appear in late October or November when the remarkable claret-red autumn leaves, which make this one of the finest foliage plants for the time of year, are falling.

Just as *Parrotia* commemorates the name of PARROT, the German naturalist and traveller, so is the American genus *Fothergilla* named in honour of DR. JOHN FOTHERGILL, who in the eighteenth century cultivated a large collection of American plants at Stratford-le-Bow in Essex. *Fothergilla monticola*, before the leaves appear, flourishes its "bottle brush" spikes of white fragrant flowers and is particularly attractive in the autumn when the leaves are stained with crimson and yellow. Unfortunately the plants in the Wild Garden and on Battleston Hill do not give the same marvellous scarlet tones as do those in some other parts of the country. Other species are *F. Gardenii* and *F. major*, the former making only a small bush and the latter being of more compact growth than *F. monticola*.

Of the species of *Corylopsis* in cultivation the most commonly grown, and the most handsome, are *C. pauciflora*, *C. spicata*, and *C. Willmottiae*. The first, a Japanese species, is considered to be somewhat tender and likes a good loamy soil in a slightly sheltered position in order to produce its few widely expanded primrose-yellow flowers in early March. This plant is to be seen in the Wild Garden. *C. spicata*, also from Japan, likewise produces its drooping yellow flowers in March, whilst the fragrant flowers of the Chinese *C. Willmottiae* usually open a month later.

Finally there are two evergreen members of this important family represented in the Wisley Collection and much the most interesting is *Sycopsis sinensis*, whose red-anthered staminate flowers are to be seen in early February on Battleston Hill. The other evergreen is the Japanese *Distylium racemosum* with ovate leaves and small red flowers produced in March and April. This plant needs the protection of a wall in this part of the country and is found at Wisley growing on the Laboratory wall near the gate-keeper's hut.

From this brief résumé of the Hamamelidaceae it can be seen that its main horticultural value lies in the fact that many of the species produce their main effect at a time when the Gardens are most lacking in floral colour.

DAPHNES

Dr. A. M. Amsler, V.M.H.

(*Lecture given on April* 22, 1952; MR. J. L. RUSSELL *in the Chair*)

IT has been my habit in the past when attending the Spring and Summer Shows to bring up bunches of any Daphne then in flower, which were placed on the small exhibits table. This may have produced the impression that I considered myself a specialist in this genus, whereas, actually, my object was to give pleasure to the less initiated who are not familiar with these most attractive of flowers.

Daphnes can well be described as everybody's plants and anyone with the tiniest garden or even a trough or two can grow quite a number; I have even seen them looking quite happy in a window box. Unlike Rhododendrons or Camellias, most of them do not take up much room, nor do they insist on any particular type of soil or protection from strong sun, although there are, it must be admitted, one or two which prefer shade. The majority, however, like full sun but will grow satisfactorily in half-shade, providing they do not receive much drip from overhead.

Taken generally, Daphnes grow into small shrubs, seldom more than 3 feet high, while many of the best are trailers of much the same habit as the commonly grown Helianthemum. All have the regrettable habit of suddenly dying off just when they had apparently attained full vigour, but this fault applies in particular to the upright species such as *Daphne Mezereum*. It has been suggested that such plants are not long-lived even in nature and that they depend on their lavish production of seed berries for the maintenance of the species. The suggestion that they flower themselves to death is, I think, not tenable. Even the trailers may die off in the same way if neglected, but in this case, life can be almost indefinitely prolonged by layering, by which means you convert your plant into a number of separate entities, and thus provide them with a much-increased root system. These newly made plants are usually left in place, but any which are well-rooted can be removed here and there, should they be required to make a new planting.

As to propagation, there are, in the main, four methods in general use. The first is by layering. I do not find this satisfactory with the stouter and more vigorous upright growers, even when the branches can be drawn down to ground level, but in the case of the trailers such as *D. Cneorum* and *D. Blagayana*, it is certainly the method to choose, for you get in the course of a year, a quite sizable, well-rooted specimen.

Some gardeners simply put stones on top of the branches they wish to layer, having first loosened the soil and perhaps dug in a little sand and leaf-mould, but I prefer to use layering pins made of strong galvanized iron wire. I press my pin down until the branch is immovable

and firmly pinned when gently pulled. If this pressure of the pin slightly bends the tip of the branch upward, I am satisfied that a certain strain has been placed on the bark, which will encourage a callus and root formation. The top of the pin is then covered by an inch or two of sand and leaf-mould mixture, and the addition of a flat stone will help to conserve moisture and prevent any disturbance by the process of weeding. Layers when well rooted can be lifted and planted out, either in autumn or spring. When I recently asked the curator of Wisley, MR. F. HANGER, which he considered the better time, he immediately answered—"The third week of April." Although I cannot be so dogmatic myself, I do think that spring is the better, and I also prefer to pot my layer and to keep it in a closed frame for a few weeks before planting out.

If, for some reason, a Daphne cannot be layered, we know that almost all will root from cuttings in sand or pumice or a mixture of sand and peat, if the cuttings are taken at the right time. This time factor is an important one, and must account for the fact that while I have at times rooted almost all my little cuttings, at others I have failed.

The following experience will prove how difficult it is to foresee results. One of the ablest and best-known nurserymen in the country asked me for material from which he could increase his stock, and I gave him enough to make possibly 200 cuttings. He went off well pleased, saying that he expected a 90 to 95 per cent. strike and would share his results with me. Some two years later, I received three or four very small plants and I truly believe that these represented the whole of his success. In my opinion he had visited my garden about a fortnight too late and this alone accounted for his failure. Even when quite successfully rooted, certain Daphnes do not turn out satisfactorily from cuttings. *D. rupestris* is a case in point, whereas its near relation, *D. arbuscula*, grows away quite happily.

Many of the Daphnes produce seed, and most of us are familiar with the red garlands of fruit we see yearly on *D. Mezereum*. These fruits only contain one large seed each. Other species which seed abundantly are *D. retusa, D. tangutica, and D. caucasica*.

As blackbirds are very fond of these fruits, it is a wise precaution not to leave them on the plant too long. When I have wanted seed, I have for some years past placed at the foot of the bush a small bottle into which I dropped the fruits as they ripened, and here they were safe until the whole crop had been collected.

Seed sown in a pan in late summer will germinate the following spring and can then be pricked out into small pots for a time before being planted in their permanent quarters, but under no circumstances should they be allowed to become in the least pot-bound, otherwise their subsequent growth will be slow. MR. BOWLES has always told me that I should sow my Daphne seeds in the open, but I have yet to find the gardener whom I can trust not to hoe through these very inconspicuous little seedlings.

Our last method of propagation is by grafting, a proceeding from which many amateurs are inclined to shy. Actually it is quite a simple operation for anyone whose fingers are not all thumbs, but a demonstration by an expert is worth pages of print and diagrams.

The stock usually employed is a two-year seedling of *D. Mezereum*, growing in a pot, and I have been told that seedlings of the type plant are more satisfactory than those of *D. Mezereum alba*. Again, some thinking gardener has suggested that evergreen Daphnes should be grafted on an evergreen stock such as *D. retusa*, whereas the deciduous *D. Mezereum* should be used as under-stock for those species which lose their leaves in the winter.

There is another method of grafting which, so far as I know, has never been tried with Daphne—I refer to root grafting which I have quite successfully performed with Camellias, even with *C. reticulata*, which is admittedly a difficult subject. One digs down at the base of a vigorous plant and here I would suggest either *Daphne Mezereum* or the very strong-growing *D. pontica*. Remove a piece of healthy root, if possible provided with root fibres. This root is shortened into lengths slightly less than the depth of the pot you propose to use, the scion is inserted by cleft grafting, and the whole is potted, watered and placed either under a bell glass or in a propagator.

The above experiment might amuse the more adventurous among you, especially if you wish to graft some species for which you have not a pot-grown *D. Mezereum*, or other under-stock. Apart from absolute necessity for certain subjects, grafting is largely utilized by nurserymen who want quick results, for grafts when they unite, have a comparatively large root system to support them and should grow away more rapidly than cuttings on their own roots.

Now as to cultivation. It is pleasing to realize that Daphnes are not at all particular as to soil, for although it is well known that practically every Daphne, at any rate the European and near-East species, grows wild on limestone formations, under garden conditions they appear to be equally happy on chalky soil or on one with a *p*H of 6 or less, such as suits calcifuge plants like Rhododendrons, Heaths, Camellias and many of our Lilies.

I have experimented on the effect of lime, by potting young plants in my own acid soil and also in loam to which I had added either limestone chips or mortar, and I have never been able to satisfy myself that any of my plants showed any benefit from the presence or absence of lime. This should be a comfort to those who garden on acid soils and who, quite rightly, dread the addition of lime of any kind to their gardens.

Books advise us to grow *Daphne odora* in peat, or at any rate with plenty of peat, but this does not mean that this Asiatic is a lime hater, for I have seen it growing vigorously on very limy soil. On the other hand, *D. Genkwa*, another Asiatic, is decidedly calcifuge, demanding an acid soil as well as shade and shelter.

BEAN tells us that he has never agreed that Daphnes require peat. This may be correct, but unless you are blessed with that ideal of all soils, a sandy loam, your plants must have some sort of humus to keep the soil open and if not peat moss, then good leaf-mould will be needed and also plenty of coarse sand or fine gravel if your garden soil is heavy. Given these conditions and in almost all cases full sun, it would seem that Daphnes are everyone's plant and should flourish in every garden. But, and there is a "but," these plants are sometimes temperamental, or perhaps unpredictable might be a better term.

They may give you of their best. Then for some unknown reason they may die out, and strive as you will, you cannot re-establish them. On the other hand, they may refuse to grow well with you, even though they may flourish next door. Notwithstanding these strictures, I am inclined to disagree with BEAN, who says that no garden can grow every Daphne, and I would rather say that the gardener himself is at fault in that he has not tried the more pernickety subjects in a number of different aspects, and soil mixtures. In my experience, there are very few species and no hybrids which refuse to grow fairly satisfactorily.

This brings me to another phase of cultivation, which perhaps I have no right to mention as I cannot speak from personal experience. I refer to the crossing of species. Two of our best and easiest Daphnes are hybrids: *D.* × *Burkwoodii* (*D. Cneorum* × *D. caucasica*) and *D.* × *hybrida* also known as *Dauphinii* (*D. odora* × *D. collina*). There is still much untrodden ground, and it seems to me that there are possibilities of raising some outstanding hybrids for those who are venturesome and younger than I. As far as I can remember, every one of these cross-breds, and a few which are suspect of not being pure-bred, show greater vitality than is usually found in the species. They have, in fact, what we call "hybrid vigour."

The pollen of *D. rupestris* on *D. retusa*, for instance, might well produce a spectacular improvement on the female parent and by using the same pollen on *D. arbuscula* might give a great improvement on *arbuscula*, but I am not certain that this last plant has ever produced seed in gardens. It might, however, do so as the result of repeated pollinations. Anyhow, there are many possible crosses which hold forth promise of new and attractive plants. It is to be hoped that someone interested in Daphnes will take up this phase of cultivation and give us still more for we can never have too many.

One cannot survey the many Daphnes in cultivation (there are, I think, over 50 species from Europe and Asia) without following some methodical order. Many authors, such as FARRER in his *English Rock Garden* and BEAN in *Trees and Shrubs Hardy in the British Isles* deal with them in alphabetical order. To my mind this is too much like a nurseryman's catalogue. It is neither instructive nor attractive and as I wanted a more scientific approach, I have decided to adopt VON KEISSLER'S classification which I hope you will agree is both intelligent and helpful.

He divides the Daphnes into sections or series much as we find in

the *Rhododendron Handbook*. If you are told that *D. striata* is a small rather wiry plant in the Section Cneorum, you can get a very fair mental picture of its appearance.

Daphnes belong to the family Thymelaeaceae, and they are either deciduous or evergreen shrubs, with leaves almost always alternate with short petioles. The flowers, perfect or bisexual and apetalous, are much like the Lilac in having a tubular base spreading into four lobes. These flowers, either terminal or axillary, appear as racemes or umbels. The fruit is a drupe containing only one large hard seed.

Many of the species and hybrids give us some of the most sweetly scented flowers in the whole garden, and although there is a family resemblance in this scent, there are several which I could pick out with my eyes blindfolded.

In considering Daphnes in their various sections, the hybrids are quite naturally not included by scientific botanists.

Section I. ALPINAE

(These are all deciduous and white-flowered.)

1. *D. alpina* is a rare upright shrub, seldom up to 2 feet, bearing terminal racemes of scented white flowers in June, followed by orange-red fruits. It comes from the Spanish Pyrenees and Southern France.

2. *D. Sophia* is a perfectly hardy deciduous shrub of little garden value, up to 5 feet, with terminal clusters of white flowers.

3. *D. caucasica* is another of the easy-going deciduous Daphnes. My plant, which I only grow for its associations, has white flowers in June, followed by yellow fruits. I grew it from seed given me by the late PROF. LYTTEL, and I also value it because it is the female parent of two valuable garden hybrids, the pollen parent being *D. Cneorum*. I refer, of course, to *D.* × *Burkwoodii* and *D.* × 'Somerset,' whose history I am in the position to give you.

Two brothers, ALBERT and ALFRED BURKWOOD, made the cross at the same time, but independently. From a number of seedlings which were raised each man chose the one which he considered the best. ALFRED'S plant was marketed by Scott & Co. and called *D.* × 'Somerset,' whereas ALBERT'S plant was sent out as *D.* × *Burkwoodii* by Burkwood & Skipwith. ALBERT tells us that his plant is low-growing and never exceeds 2 to 3 feet, usually less, and that *D.* × 'Somerset' is larger in all its parts and is a coarser plant. My own first and largest specimen of × 'Somerset' is quite 4 feet high and as much across after many ruthless prunings and even the application of a saw.

Section II. OLEOIDES

D. oleoides, a rare and slow-growing shrub up to 1½ feet, with purple terminal flowers, is sometimes confused with *D. neapolitana*. This plant and the others in this series are evergreens. The leaves are thick and stalkless, terminating in a bristle-like tip.

Other members of this section are *D. jasminea*, *Staphii*, *linearifolia* and *guidioides*. Some are obscure and none is of much garden value, at least two having brownish-white flowers.

Section III. GNIDIUM

Here again we need not pause for long—*D. Gnidium*, which runs up to 6 feet, has brownish flowers, and *D. Roumea* is an obscure and little-known species.

Section IV. CNEORUM

Here at last we meet some old and welcome friends. *D. Cneorum*, the "garland flower," is perhaps the most generally beloved of the whole tribe. It forms a procumbent evergreen bushlet, every branch of which terminates in April and May with a raceme of rose-pink, deliciously scented flowers.

It is easy in full sun with good drainage, and appears to be quite indifferent to the presence or absence of lime. However, it is one of the "unpredictables" to which I have already referred.

D. Cneorum alba is a minute gem, altogether too small for beds or rock gardens. A number should be planted close together in a trough or pan for effect. Bought plants always appear to be grafted and I have never been able to layer it, but it can be struck from cuttings. Although it may be a white micro-form of *D. Cneorum*, I have often wondered whether it might be an albino form of some other species. Could it possibly be an albino of *D. Cneorum var. pygmaea*?

D. Cneorum var. eximia and the next species on my list are by far my favourites in this section. *Eximia* is undoubtedly superior to the type in every way. It is larger both in leaf and flower, and the latter, even when still in bud, are of a much more brilliant colour (Fig. 4).

At a distance of several yards it is easy to distinguish its ruby-red buds from those of *Cneorum*, which are pink. MR. A. T. JOHNSON tells me that he once had a plant of *eximia* 6 feet across, which suddenly died. Possibly he had omitted to layer it here and there, as I must do with my plant which shows signs of "going back," horrid words with Daphnes.

I do not quite know how to introduce my next subject, as I am not certain of its correct name. It came to me from the late W. J. MARCHANT under the label *D. Verlotii*. The true plant was found in the Pyrenees and named as a species by GRENIER, but it is probably a variety of *Cneorum*. MARCHANT often assured me that his plant was the true species, but experts have queried it.

It is described as having longer and narrower leaves than *D. Cneorum*. In my plant the leaves are certainly narrower. I am going to ask you to allow me the same licence as you would your jobbing gardener, and to let me call it 'Verlotii.'

When my plant arrived, it was a small upright bush about 12 inches tall. Because of the rapid growth and weight of the branches the plant,

with a breadth of 2 to 3 feet, is now completely procumbent like the rest of this series. Its inflorescence is exactly that of the variety *eximia*, the same more brightly coloured flower buds and the same improved *Cneorum* flowers. The leaves are narrower than those of *Cneorum* or *eximia*. I would defy anyone to distinguish between a short sprig of my *Verlotii* and *eximia*, either in bud or in flower. However, as a growing plant it is very much more vigorous and spreading and is my undoubted choice of the series so far discussed.

D. striata receives scant courtesy from FARRER, but as I remember it growing above Le Lautaret, near *Eritrichium nanum* and *Primula viscosa*, it brings back a picture of enchantment. This little Daphne which admittedly is a small stringy counterpart of the *Cneorum* we know, grew in patches the size of a tennis court, and as thick as heather in our highlands. Its scent was almost intoxicating and I found at least two albinos, but dig as I would I could never secure the smallest plants with the semblance of a complete root. Some which I took home grew, or rather languished for a year or two, and seeds sent me from the Botanical Gardens at Le Lautaret did little better. It is obviously a plant which does not like me, or, as far as I know, anyone else in this country.

Daphne arbuscula on the other hand at one time showed great affection for me and the feeling was reciprocated, for it was through this plant that I first saw my name in the horticultural press. CLARENCE ELLIOTT in his *Rock Garden Plants* describes my plant growing in ordinary loam at Eton, and adds that I gave it away "like lumps of Privet." It certainly was a vigorous plant, some 2 feet across, and I was constantly layering it.

It is usually seen as a small prostrate plant 2 to 3 inches high and seldom more than a foot across. The small dark green leaves are grooved and the young branches have a reddish-brown hue. The flowers are described as rosy-pink, but to my eye they have, like one or two other species, a suggestion of analine dye (Fig. 3).

D. petraea (Syn. *D. rupestris*) is the very plant which more than sixty years ago suddenly transformed me into a rabid gardener. Affection, unlike most other diseases, has no remissions. It does not even become chronic but rather more and more acute as the years go by. As a small boy of twelve, I had been taken by a party of Swiss grown-ups for a short expedition into the Tyrol. I was, and still am, an ardent naturalist and on that great day, as usual well ahead of my party, I had captured several species of newts, the alpine salamander, and that most beautiful and rare species of butterfly, the Apollo.

Suddenly I was pulled up in my tracks, for possibly a hundred yards away I was faced by a high menacing cliff, much of whose surface was covered by great splashes of red, so bright in hue, that I, in my innocence thought they might be Geraniums. I particularly wish to stress the colour, for *Daphne petraea*, which this turned out to be, as grown in England has always since disappointed me. It may be a case

of distance and enchantment, but I truly think that the clarity of the alpine air and its dazzling sun must have added much to the brilliance of those myriads of blossoms. None the less, this is a plant of great charm either in the rock garden scree or in a pan. The leaves are about ½ inch long and so narrow as to be called linear, the flowers profusely produced in the late spring are tubular in shape, sometimes more than ½ inch long, rosy-pink in colour, and of course, deliciously scented.

A very green-fingered neighbour who has a small nursery tells me that *D. petraea* is easy to strike from cuttings—but the little plants so produced hardly grow at all and seldom flower. She showed me a two-year-old plant which you could have covered with a threepenny bit. These plants on their own root are inclined to make stolons, but these unfortunately flower even less than the parent plant, so, I fear, we must resign ourselves to buying grafted plants which flower with wonderful freedom and grow so much faster. Even so, starting from scratch, it will take many years for your plant to attain a diameter of 6 inches.

The plant of *D. petraea* illustrated is a triumph of skill and care both in propagation and cultivation. It must have been adored, if not worshipped, by hundreds of thousands, both at the Chelsea shows and on its native heath, the Six Hills Nursery. It cannot be bought and has already reached the hoary age of a quarter of a century. I do not think that even MR. FRANK BARKER could tell you how to grow its equal in less time (Fig. 1).

Do not think that I am an old man boasting of my past triumphs when I say that I once had a plant of *D. petraea* very nearly as good, which grew for twenty years in the open in my Eton garden.

I would like to tell you of my experience in growing *D. petraea* on rock. Many of you may be familiar with a calcareous rock called tufa, which is usually of stalactitic origin, for it is very soft and easily drilled with brace and bit. As I had seen difficult alpines, especially the encrusted Saxifrages, grown in holes so drilled, I procured a lump of tufa and planted two plants of *D. petraea* in it. The result, which was a complete failure, gave me an idea. I had at the time a quantity of very hard Derbyshire limestone and selected a large rock which must have weighed ½ hundredweight. With a cold chisel, a four-pound hammer, some skill, and much sweat, I split this rock from top to bottom.

The two halves were placed in their permanent quarters, leaving a crack of 1½ inch. Their bases were well rammed and finally a collar of concrete put round them at ground level ; this was easily hidden by throwing up a little soil. When all was well set, I filled the crack most carefully with a mixture of peat and a little sand, every inch being well and truly rammed. Finally my little *petraea* graft was planted and watered, after which I waited with my fingers crossed.

It never gave me a moment's anxiety and covered itself with flowers every year except one. On that occasion it made phenomenal growth, by which I mean growth of over an inch all round. It might interest anyone possessing several plants to sacrifice the blooms from one for a

season by picking off every flower-bud in its earliest stage to discover whether it would give the added growth to which I have just referred.

As I have said already, my *D. petraea* waxed strong and vigorous for a number of years. It even withstood complete submergence in the Thames floods on several occasions, but its tragic end is one over which I would prefer, unless pressed, to draw a veil.

Section V. DAPHANTHOIDES

This includes several old friends, the best known of which is probably *D. odora*.

The true *D. japonica* is apparently a separate species with smaller and fewer flowers. The plant which masquerades under that name in gardens should, I think, be called *D. odora aureo-marginata*. Some think it is a trifle hardier than the type with wholly green leaves. Both varieties are most frequently treated as pot plants in the cool or cold greenhouse and there can be few subjects which are more welcome in the house during the late winter and early spring, for this is one of the Daphnes with a really distinctive scent, and in my opinion not equalled by any other garden flower. When saying this, I am not forgetting a large bunch of Lily of the Valley, or a bush of Honeysuckle in full flower on a summer's evening. It has always been my ambition to have a pot plant of *D. odora* some 3 feet high and as much across, but my own have always begun to go back long before reaching that size. It is possible that they do not like root-restriction and that I have been lazy about potting them on for I have often had plants of 3 feet in the open and have seen them even larger elsewhere. I always think that the habit of this plant is its one drawback for it is not at its best when planted out with no support. Secondly, it does not flower so well, at least in the Home Counties, unless it has the protection of a wall against which it can lean. I have owned and lost a good many in my time but I have never been convinced that these losses were due to frost.

Although *D. odora* will grow quite luxuriously in the shade it seems to require a good deal of sun heat to ripen its wood and encourage flower-bud formation. A west wall is an ideal situation, for in a southern aspect the handsome dark green glabrous leaves are inclined to have a tinge of yellow. The flowers of this well-known plant appear in dense peduncled heads of ten to twelve to the bunch. The best heads appear at the end of the main growth of the previous year, but many of the earlier though perhaps smaller bunches will be found lower on the bush where they may have had more shelter. In colour they are rosy purple, more marked on the reverse of the petals, and there are also pure-white forms.

Although it is a cross between *D. odora* and *D. collina*, *D.* × *hybrida* (Syn. *D. Dauphinii*) may well be considered here. In appearance much like *odora* the leaves are a trifle smaller, glabrous or slightly hairy. The flowers are a good deal darker, a reddish purple. Its scent is only just inferior to that of *odora*, a fact only proven by direct comparison.

Although *D. odora* and *D.* × *hybrida* are often sent out as grafts, they can be raised from cuttings.

D. cannabina is synonymous with *D. papyracea* which I have under glass. The foliage is much like that of Laburnum and the flowers are white followed by yellow berries. I grow *papyracea* very badly, in fact, it would have been lost had it not produced one berry before it expired. The seed from this germinated and has given me a better plant than its parent, which was grafted.

The next two species, *D. retusa* and *D. tangutica*, are rapidly becoming popular with gardeners, for they are easily raised from cuttings or seed. Both are as hardy as pebbles, growing anywhere and in almost any soil and they give us flowers which have the typical Daphne perfume. Unfortunately they grow very slowly indeed.

The late G. P. BAKER'S plant of *D. tangutica*, which he bought from VEITCH'S original distribution, and which is the largest I have seen is not more than 2 feet high and about a yard across. My own seedlings from this plant, which are five or six years old, are only some 9 inches high, but all have flowered. The stiff foliage is slightly darker than that of *D. retusa*, a dull sage green would be a fair description; the flowers borne in umbels are rose-purple outside, but white within suffused with purple, while *retusa* is rose-lilac and pure white within (Fig. 5).

Although some will disagree with me, it is my experience in two gardens with completely different soils that *D. retusa* is the more rapid grower of the two. I am aware that there have been two importations of *D. tangutica*, and it is possible that the second is of a freer growth. Indeed, I much hope so.

Section VI. COLLINAE

D. collina of which *D. neapolitana* may be a variety, is a rare plant. The evergreen leaves, up to 1 inch long, are glabrous and shining above but their lower surfaces are tomentose; the rose-purple flowers appear in terminal heads of ten to fifteen.

It is, as you will remember, one of the parents of *D.* × *hybrida*. *D. neapolitana* is closely allied to *D. collina*, but the leaves are less hairy on the undersurface. It may even be a natural hybrid between *collina* and *Cneorum*. Like a few others *collina* and *neapolitana* give us a small, but very welcome, crop of flowers in late summer and autumn.

D. sericea also has this pleasing trick. It has narrow, leathery, pointed, irregular leaves, whose undersides are clothed by silky hairs. The flowers are of the usual rose-pink and, like others of this section, have the typical scent. These three species make compact rounded bushes, not usually above half a yard in height; all are evergreen.

The last of this series which I propose to mention is the well-known *D. Blagayana*. At first glance, it is about the least typical of the Daphnes. In fact, in my youth when I first saw plants of this species growing in a rock garden while still in bud, I took it for a dwarf prostrate Rhododendron. *D. Blagayana* makes long spreading prostrate branches which

are mostly bare until at the tips one finds bunches of oval, 1- to 1½-inch glabrous leaves. The sweetly scented flowers, which are creamy white, are borne in heads of ten to fifteen at the ends of the last year's growth, in March. It is about the first Daphne to flower after *Mezereum* and *odora*.

D. Blagayana hails from the lime regions of Eastern Europe, but in this country it is quite happy on acid soils. It is never at its best except in half or full shade. I have a plant growing half in shade quite 10 feet across and over 2 feet in height, but this unusual feature is due to parts of it having grown up into neighbouring Rhododendrons. *D. Blagayana* should be frequently layered by pegs or stones to improve its appearance and vigour, and to prolong its life (Fig. 2).

Section VII. MEZEREUM

D. Mezereum is the type plant in this section and the best-known of the whole genus. It might well be known among Daphnes as the harbinger of spring, for its sweet-scented blooms greet one in March or even in February while it is still quite leafless.

The flowers are borne in clusters of twos or threes along the whole of the upper ends of the branches. These vary in colour from purple to a good crimson. Some shades are not very attractive, reminding me of a raw beet. The long columns of red berries clinging closely to the branches are a familiar sight in summer. I suspect that the good colour forms could be better obtained by cuttings than from seed.

D. Mezereum, when satisfied, will easily run up to 5 feet, but the shape of the bush is not always pleasing, for it may consist of only a few long gawky branches, making a fastigiate tree much like a Lombardy Poplar. There are forms, however, which bush out beautifully, and it is from these that you should take cuttings.

Then we have *D. Mezereum alba* with its translucent amber fruits. Here again one must choose carefully, for there are whites which are creamy, and others which are like the driven snow. Perhaps the best is MR. BOWLES'S A.M. form. I have seen these plants in his garden, and with all due respect to that very great gardener, I did not think them the equal of the plant in the late MR. J. B. STEVENSON'S garden at Ascot. This quite lovely specimen, a seedling from MR. BOWLES'S plants, was growing in a very acid sandy soil. It must have been 6 feet high and over 2 feet across. The branches were wreathed in snow-white flowers from base to top, and it was a sight I have never forgotten.

MRS. STEVENSON has sent me three self-sown seedlings, which have flowered, and I am sorry to say that they have turned out to be just ordinary whites, less clean in colour than two or three older plants already in my garden. This is another example of the necessity of propagating variable plants by vegetative means when one wishes to fix any particular quality. The alternative is to grow a number of seedlings and to rogue those which are not satisfactory.

There is also a white *D. Mezereum* with double flowers. *D. Pseudomezereum* is a much lower-growing or even procumbent form with

greenish-yellow flowers. *D.* × *Houtteana* is said to be a hybrid between *Mezereum* and *laureola*.

I have already mentioned that it is difficult to foretell how any Daphne may choose to behave under different conditions of soil and locality, even though we know that most species are very amenable and quite indifferent to the *p*H of the soil. Oddly enough it is to the two best-known Daphnes that my term "unpredictable" most fairly applies. These are *D. Cneorum* and *D. Mezereum*. In my garden in Kent, *Cneorum* grows quite well in one or two beds, but in a bed where *retusa* and *tangutica* grow quite well, I have more than once dug up and thrown away good plants of *Cneorum* which I had planted there, and which had gradually become so sickly that they were a reflection on myself.

A much more puzzling behaviour of this species occurred in the garden of an acquaintance in Berkshire. There, quite 20 years ago, I saw it growing as an edging some 30 to 40 yards long. More vigorous than any Helianthemum or Alyssum, it had to be sheared back from time to time because it was inclined to invade the whole gravel path.

When I met this friend a year or two ago, I enquired about his lovely Daphnes and he answered, "Don't talk about them. They began to die off some time back, and do what we will we cannot re-establish them." Why?

D. Mezereum is, if anything, more puzzling in its behaviour. Like the Madonna Lily it will thrive for the cottager and may refuse even to exist for the countess or the duke.

In my small garden at Eton where the soil was a trashy limy gravel, both the red and white *Mezereum* grew as tall and as broad as myself and it was seldom that I could not find half a dozen self-sown seedlings for any friend who wanted them. In my present garden, there are not many shrubs of this species which would not shame me if you paid me a visit.

"Ah, yes," you will say, "you had lime at Eton." But may I once more remind you of that white *Mezereum* growing at Ascot in a highly acid soil consisting chiefly of pine needles and sand, in which grows one of the finest collections of Rhododendrons in the world.

It is well known that *D. Mezereum* is about the worst culprit in that it usually elects to expire when it has reached its best. Some books and authorities say that they have "flowered themselves to death," but other shrubs do not do this. Look at Rhododendrons, Camellias, and a host of other flowering shrubs and trees. Anyhow, this would not account for the disappearance of seedlings from a friend's garden and again I ask you, "why?" Personally I cannot pretend to answer these two questions, but very hesitatingly I should like to offer two theories, which, let me hasten to add, are not in any way confirmed or backed by the scientists.

Some of you may be familiar with the term "symbiosis," which is defined as "the living together of dissimilar organisms with benefit to one or both." This term covers the fungi and bacteria where they help

the well-being of plants. There are, for instance, certain soil fungi which live in close association with ericaceous plants, and I should like to suggest that there may be other fungi or bacteria, the presence of which may benefit Daphnes and whose absence or death may account for our failure both in establishing and also in maintaining these plants for a reasonable length of time.

Another possible explanation of our occasional difficulties or disappointment may lie in the absence of one or other of the trace elements (such as boron, manganese or even copper), minerals which are only required by plants in literally microscopic quantities, quantities which might easily be leached or washed away by rains or artificial waterings. Certain it is that we lovers of Daphnes would be grateful to the bacteriologists or the soil chemists if they could help us unravel the mysteries of these unpredictables.

Section VIII. LAUREOLA

Of the species left for me to describe *D. Laureola* and *pontica* may be a trifle too coarse and big for many of you. Both are plants which should be grown in the broader and shadier parts of your garden. I do not care greatly for *D. Laureola*. In some gardens of heavy soil it seeds itself so freely as to become a nuisance. It is an evergreen bush up to 2 to 3 feet in height; the thick fleshy leaves, which may be 3 inches long, are of a lustrous green and the yellowish-green flowers are borne in clusters. There is a variety *purpurea* which might be attractive. *D. Phillipi* is a much dwarfer form from the Pyrenees.

The type *Laureola* comes from South and West Europe, and is a native of this country, flowering in February and March. The fruit is ovoid and bluish-black. You are advised not to eat it.

Although *D. pontica* bears some resemblance to *Laureola*, I very much prefer it. My only specimen of *pontica* is now a spreading bush, 5 feet in height. It always looks happy and well groomed with its stalkless glossy leaves and, in April and May, its yellowish spidery flowers produced from the axils at the base of the new terminal shoots. Their scent is very elusive and in my experience more often quite absent. It is said to fruit quite freely, but I have never seen any of its blue-black berries.

The two last species I propose to mention are both little known and very seldom well grown. *D. Genkwa*, a deciduous Chinese species, may grow to form an upright shrub of 3 to 4 feet. It is the only Daphne the majority of whose leaves are opposite instead of alternate. The whole growth is soft instead of rigid, and the 1- to 2-inch leaves are also soft, of a light green colour and silky underneath. It flowers in May when grown outdoors, and the lilac blooms are borne in clusters from the previous year's wood.

It is rather tender but many losses of this plant have been due to maltreatment. It should have the shadiest and best sheltered place you can find for it, lime-free, with plenty of peat or good leaf-mould. Plants

on their own roots are preferable to those which are grafted. Would that my one plant would produce a few seeds.

D. aurantiaca I have never grown; in fact, I have never even seen it. *D. aurantiaca* was first introduced to gardens by FORREST from W. Yunnan and he described it as "one of the most beautiful flowering plants" in that locality. This is high praise indeed when one remembers the many outstanding introductions from those regions. FORREST also said that in places the loose limestone rocks were positively smothered by its sweetly scented orange-yellow flowers. According to REHDER it can grow to a height of 3 feet.

It has proved to be a difficult subject in our gardens, but possibly, in view of its native habitat, it might be found more amenable if planted in a very austere limestone scree. This is certainly an untypical Daphne and some botanists have wanted to place it in the genus *Wikstroemia*, but most of us would not be much worried about its exact placing if only we could get hold of two or three plants.

I am afraid that most of you have learned very little, but if a few have been fired by the wish to grow Daphnes in quantity, I shall feel that their time has not been wasted, for they will never regret their decision.

SOME RECENT PRIMULA INTRODUCTIONS

H. R. Fletcher, Ph.D., D.Sc.

PART II

P. Elizabethae (Fig. 10) and *P. falcifolia* are two magnificent yellow-flowered species which made but a fleeting appearance in cultivation. LUDLOW, SHERRIFF and TAYLOR discovered, and flew home, the dark red resting buds of *P. Elizabethae* in 1938. The plants survived until 1941, but then died, without once flowering. It appears to be confined to some seventy miles of the main Himalayan Range in S.E. Tibet between 13,000 to 14,000 feet altitude, and on some of the passes where the discoverers foundit it was covered by 4 feet of snow in the middle of May, and by the beginning of October had shed its seeds and had developed its resting buds. At the time the large pale lemon-yellow flowers with their pale yellow farinose eye, are open, the ovate leaves are not completely exserted from the reddish bud scales. *P. falcifolia* (Fig. 7) forms similar perennating buds and though it is closely akin to *P. Elizabethae* its linear-lanceolate leaves readily distinguish it from this species. When WARD discovered *P. falcifolia* on the Doshong La in S.E. Tibet in 1924, he recorded it as growing abundantly in open bogs on steep alpine turf-slopes at an altitude of 13,000 to 14,000 feet. WARD's seeds did not germinate well; neither did LUDLOW, SHERRIFF and TAYLOR's in 1938. But the resting buds sent home by these latter collectors did survive for three or four years; the daffodil-yellow flowers were seen in one or two gardens

in 1939 and again in 1940; one or two plants even produced seeds; but by 1943 the species had been lost to cultivation.

Still another yellow-flowered Nivalid is our concern, *P. elongata*, first collected by HOOKER in the Sikkim Himalaya in 1849. MR. RONALD SMITH, in 1937, appears to have been the first in Britain to flower it, and he grew his plants from Sikkim seeds. Later LUDLOW and SHERRIFF sent home resting buds and seeds from Bhutan, where it is the most common member of its section, and where it varies greatly in habit—and in leaf shape. It may be a forest plant at from 11,500 to 13,500 feet, or it may extend to well above the tree-line on the open hillsides. Here, the plant is smaller, and at first the leaves tend to be round. Later, as the plant ages, the leaves lose their roundness and become obovate or oblanceolate. One such plant was sent to MAJOR and MRS. KNOX FINLAY in 1949. When we examined the round leaves, one or two of us who thought we knew Primulas, called the plant *P. Barnardoana*, a yellow- or orange-flowered member of the Rotundifolia section, which WARD discovered in S. Tibet in 1935. Imagine our surprise when, the next time we saw the plant, the leaves were no longer round but oblanceolate. I am certain that what has been called *P. Barnardoana* is but a juvenile and high altitude form of *P. elongata*. This serves to emphasize the fact that the small section Rotundifolia cannot be sharply differentiated from the large aggregate of the Nivales and that there is a measure of justification for including such plants as *P. Caveana*, *P. Littledalei* and *P. consocia* in section Nivales.

P. Caveana in N.W. Sikkim, S.E. Tibet, and Bhutan, tries to hide its beauty by growing under huge boulders, or overhanging cliffs. Rain hardly touches the plant, but instead percolates through yards of rock cracks before it reaches the roots. Thus *P. Caveana* grows under somewhat arid conditions, as the persistent rhizomes enveloped in old leaves and wiry petioles well testify. The leaves are unusual among the Rotundifolia species in being decurrent at the base and in having a petiole poorly developed. As a rule the scape is 6 to 8 inches high, though it may be not much more than an inch, and carries an umbel of one to nine fairly large pale purple, lemon-eyed flowers (Fig 8). The flower colour is not constant, for in 1949 in parts of Bhutan, SHERRIFF found an occasional white-flowered plant growing here and there among thousands of the usual type, whilst in another locality LUDLOW discovered a whole cliff of the white form completely isolated from the purple form. Apparently the flower colour of *P. Littledalei* is likewise variable, for when the species was described in 1916—the description being based partly on material collected near Lhasa by WALTON in 1904—the flower colour was said to be yellow. And yellow was the colour of the flowers of specimens taken by LUDLOW and SHERRIFF at Reting, some sixty miles north of Lhasa in 1942. But in all other material they, and WARD, have collected elsewhere, along the north face of the Himalaya from the frontier of Bhutan to the region of the Tsangpo Gorge, the flowers are a beautiful pale shade of mauve, varying to deep magenta-purple, with a creamy yellow eye.

This species *also* grows under great overhanging rocks, and though it is often enveloped in mist never receives direct precipitation. These are conditions almost impossible to duplicate in this country, and although both these species have been in cultivation for some twelve years, they have never been anything but scarce—and at best always will be so. And I fear that this is the most one can say of the purplish-pink, yellow-eyed *P. consocia*, although its facies suggests that its habitat is much more moist than that of the other two species. I know of only one garden which has really done justice to this species—the Ross-shire garden of MRS. SHAW MACKENZIE. *P. consocia* is one of KINGDON WARD's-discoveries; he found it on the Drichung La in S.E. Tibet in 1935, growing at elevations of 15,000 to 16,000 feet. Unlike *P. Littledalei* and *P. Caveana* it is more or less efarinose; it has a very slender root stock and lacks the farinose resting bud of *P. Littledalei*.

Still another group of species which has proved intensely obdurate in cultivation is the Dryadifolia section. All five members of the section are high alpine mat-forming plants inhabiting the western ranges of Yunnan and Sikang, the Bhutan and Assam Himalaya, the adjoining alps of S. and S.E. Tibet and a corner of N.W. Burma. Of all of them an abundance of seeds has been collected but with disappointing results. The only yellow-flowered species, *P. chlorodryas*, was exhibited by LORD ABERCONWAY at the May meeting of the R.H.S. in 1934, grown from seeds harvested by ROCK who discovered the plant on the limestone rocks of the Fuchuan Range of N.W. Yunnan. The beautiful rose-crimson-flowered *P. dryadifolia*, known since 1884 when DELAVAY found it in the Lichiang Range of Yunnan, flowered in a few gardens in 1914 raised from FORREST's seeds. Both plants failed to attain the stout rhizomic development which characterizes them in native haunts. MR. R. B. COOKE of Corbridge, who has grown so many difficult alpines so wonderfully well tells me that he believes that it should be possible to grow *P. dryadifolia* long enough to enable it to develop a considerable sized rhizome. For from FORREST's seeds he grew plants for five or six years and only lost them because they were poisoned by an insecticide. MR. COOKE may be correct in his opinion and he now has the chance to try his luck again, for the plant which has been known since 1915 as *P. Jonarduni* is now in cultivation, though sparingly so, and has shown itself to be but a form of *P. dryadifolia* which ranges wide in Yunnan, Sikang, S.E. Tibet and Upper Burma and which in its extensive area colonizes not only limestone but gneiss and granite as well and exhibits considerable variation in growth form. Until LUDLOW and SHERRIFF collected an abundance of both *P. dryadifolia* and *P. Jonarduni* in 1948 the latter was considered to differ from the former in having almost scapeless flowers which were hairy in the corolla-tube. LUDLOW and SHERRIFF, however, found all transitions from flowers without scapes to flowers markedly scapose, from flowers with no hairs within the corolla-tube to flowers markedly hairy within the tube. Quite clearly *P. Jonarduni* must go the way of four other plants previously given specific status and be

sunk to the limbo of synonymy of *P. dryadifolia*, which in nature flourishes close to the limit of perpetual snow at 15,000 to 16,000 feet altitude. It is one of the last species to flower and one of the first to mature its seeds. Not until May or early June is it free of its icy covering and by early October it is again buried under many feet of snow. FORREST has described how during its brief season it is exposed to the elements. Often it is covered with snow and exposed to bright sunshine in the same hour, and day after day it may be swathed in heavy mists or drenched by blinding showers of icy rain. A few cultivators have raised and flowered plants from LUDLOW and SHERRIFF'S 1949 seeds and have been able to keep their plants alive until this date.

From the behaviour in cultivation of the members of the section Minutissimae—usually one sees a minute plant sitting in the middle of a much larger pot—there is every excuse for thinking that they are too small and insignificant and feeble of flower to be of any garden value. But in nature, they grow not singly but in masses, seaming the crevices of vertical rock faces with myriads of flowers, which for the size of the individual plants, are remarkably large. If only they could be induced to behave in cultivation as they do in nature, no finer crevice plants can be imagined.

The few that have been in gardens have been very short lived, and indeed, even in nature, there is no vigorous rhizomic development to indicate that the individual plant has a long life. To some extent this is compensated by the production of stolons. For instance *P. flagellaris* discovered by SMITH and CAVE in Sikkim in 1909 and since found in Bhutan throughout an altitudinal range of 8,000 to 15,000 feet begins to develop stolons as the blue-violet, white-eyed flowers fade. By autumn leafless flagellate stolons as much as three inches long are developed. These are terminated by small leaf rosettes which take root. But in spite of this habit the species has proved difficult to retain. The plants which flowered at Edinburgh and at Bodnant in 1939 were quickly lost, although MRS. SHAW MACKENZIE retained her plants for several years. LUDLOW and SHERRIFF reintroduced it in 1949, along with the closely allied *P. tenuiloba* and *P. Waddellii*, both distinguished from the rest of their section by the long narrow corolla-lobes, the former covered on the outside of the corolla with long white hairs and the latter with the corolla quite glabrous. *P. tenuiloba* has already been lost and though *P. Waddellii* is still with us and in one or two gardens has even deigned to flower, cultivated specimens are but a shadow of the gorgeous plants LUDLOW and SHERRIFF collected in Bhutan in 1949. The charming dwarf *P. reptans*, which in the N.W. Himalaya forms dense mats on rocks and steep stony hill slopes, promises to behave better with us than these. At any rate it flowered for MR. RONALD SMITH in 1936 and it has been in cultivation, if somewhat intermittently, ever since. For the past two to three years it has grown very well indeed on the peat walls of the Edinburgh Botanic Garden where it has to be covered with fine wire netting to prevent the birds picking it to pieces. But although it has flourished so well it has

not as yet proved to be very floriferous, although MR. MASTERTON was able to exhibit a fine pan of it at the Scottish Rock Garden Club show in May of last year.

The members of the Farinosae section are another group of species which have not taken kindly to our gardens, although of one or two of them, the now well-known Kashmir endemic *P. Clarkei* for instance, there are good stocks of plants. One species, *P. Jaffreyana*, at first promised to be a first-class garden plant but has not fulfilled its early promise. The first plants which flowered from LUDLOW and SHERRIFF seeds and from the most minute of dried up resting buds which these collectors sent home in 1937–38 were most beautiful, the large mauve or pale violet flowers being well set off by the handsome leaves covered below with a thick though somewhat fugacious white farina. Of recent years, however, it appears not to have attained the same charm as formerly, the flowers being markedly inferior in number, size and colour. Still it has remained with us for fifteen years so one must not grumble. *P. Sharmae* from Nepal is altogether an inferior plant to *P. Jaffreyana* which it somewhat resembles. Discovered in 1931, it flowered in Edinburgh in 1933 and persisted but for a season or two. COLONEL LOWNDES has recently reintroduced the plant. A better plant by far is *P. Taylor-iana* which received an Award of Merit within two years of its being introduced by LUDLOW and SHERRIFF who sent home resting buds by air mail in 1947. It is clearly allied to *P. Jaffreyana* but differs in the possession of a much larger resting bud and shorter stalked leaves arranged in a more compact rosette. The plants which gained the Award of Merit for LORD ABERCONWAY and MR. LIVINGSTONE in March 1949 were most beautiful, with large violet pale whitish-yellow-eyed flowers over an inch in diameter. Personally I am doubtful if *P. Tayloriana* will prove to be hardy. But MRS. CREWDSON, from her experience of it, has no doubts at all that it will be perfectly hardy; she finds it most amenable and not in the least exacting in its requirements.

Of course, the truth of the matter is, that when a new plant arrives it is almost impossible to say how it will react to cultivation, for only occasionally is there enough material available to allow for experiment into its particular cultural requirements. I am thinking particularly of two species of section Souliei, *P. Aliciae* and *P. xanthopa*. Both species are extremely rare in nature, the former being known only from one locality in S.E. Tibet, the latter from one locality in E. Bhutan. Seeds of *P. Aliciae* were sent home by LUDLOW, SHERRIFF and TAYLOR in 1939. In Edinburgh the germination was nearly 100 per cent. and by September 1940 several plants were flowering. MR. R. B. COOKE had the same experience though his plants flowered in April. It promised to be an easy species. But the Edinburgh plants which flowered did not set seeds and by the following year all of them had died. MR. COOKE'S plants did set seeds which for two years at any rate he was able to distribute. Even so, by 1946, there was hardly a plant in cultivation and now it is completely lost. It is the same with *P. xanthopa*, which, with its deeply

cut foliage heavily dusted with golden farina, and with purplish-pink yellow-eyed flowers arranged in a few flowered umbel on a slender four- to six-inch scape, is a most attractive plant. All the growers who had received LUDLOW and SHERRIFF air-mail plants and seeds in 1949 had experienced so little difficulty with them that in the Society's JOURNAL in 1949, I was foolish enough to write that no cultural difficulty was likely to attend *P. xanthopa* and that it promised to become more common in culture than it is in nature. I was much too optimistic for this year there is much less stock of it in the country than there was last year—not a very encouraging prospect for the future.

I am sorry to have depressed you by telling you of so many failures. Still, there are some recently introduced Primulas which appear to be perfectly established and which have proved most valuable acquisitions to our gardens. *P. ioessa* (Fig. 9), an important addition to the Sikkimensis section, is one of these. Known only from S. and S.E. Tibet, where it was first collected by WARD in 1935, and from whence it was introduced by LUDLOW, SHERRIFF and TAYLOR in 1938, it is a charming plant whether in its typical form with pale madder-pink or pinkish-mauve flowers or in the form with white or creamy white corollas known as var. *subpinnatifida*. It has the habit of *P. Waltoni* and of *P. sikkimensis*, but it is a smaller, more slender plant than these and usually can readily be distinguished from them by its almost black calyx and more incised oblanceolate leaves. In S.E. Tibet it is a denizen of open swampy meadows and thus in cultivation requires the same horticultural treatment as the rest of the section.

In the last fifteen years so many new Petiolares Primulas have been brought to our gardens that they have almost begun to rival in popularity the Sikkimensis and Candelabra species. At the last Primula Conference in 1928, only one species, *P. Edgeworthii*, perhaps better known still as *P. Winteri*, was at all well-known in gardens and even it was not considered an easy subject. *P. gracilipes* and *P. Calderiana* had been in cultivation in 1886–87 but had not long survived, whilst *P. sonchifolia* had lived to produce a few feeble flowers but had quickly passed away. How different is the story to-day when there are at least a dozen first-rate Petiolares plants in cultivation.

Plants under the name of *P. Boothii* have been in cultivation for several years; but such plants have been either *P. gracilipes*, *P. scapigera* or even other species. I believe, however, that the plant LORD ABERCONWAY grew in 1949 from seeds supplied to him by GHOSE of Darjeeling, under the name of *P. petiolaris*, is *P. Boothii*, and that this is the first time it has been in cultivation. The plant is named after BOOTH who is believed to have collected it on the Balipara frontier in 1853. It is very close indeed to *P. scapigera*, but has a very different calyx; the calyx segments are more or less ovate, acute and frequently slightly toothed; they are not long and attenuate, and neither do they reflex, as in *P. scapigera*. Also on foliage characters can these two plants be distinguished for the dark green leaves of *P. Boothii* have their petioles and mid-ribs

deeply stained with red. The clear pink, yellow-eyed flowers are very attractive.

It is also my opinion that *P. petiolaris* is now in cultivation for the first time, introduced under the number L. & S. 19856. LUDLOW and SHERRIFF sent to MAJOR and MRS. KNOX FINLAY under this number a single plant of a Petiolares Primula, which, when in magnificent flower received a Preliminary Commendation at the Alpine Garden Society Show in March 1950. It propagates very readily by division and from their original plant MAJOR and MRS. FINLAY now have a fine batch of plants. The efarinose flower buds form a compact cluster in the heart of the rosette of oblong-spathulate erose-denticulate efarinose leaves, whilst the mature flowers are a fine reddish purple. To judge from its behaviour at Keillour Castle it will prove as amenable in cultivation as the now well-known *P. gracilipes*, which introduced into this country in 1886 and figured in the *Botanical Magazine* in 1889 under the name *P. petiolaris* var. *nana*, was reintroduced in 1936.

The story of the advent of the yellow-flowered and golden-eyed *P. aureata* is now familiar to many. A single plant was raised in Edinburgh in 1941, among a pan of seedlings of *Swertia purpurea* which had been raised from seeds sent from Lloyd Botanic Garden, Darjeeling. That is all we know of the history of the plant for it has never been found in the wild state. It propagates readily by division and is now fairly well established in cultivation. But few cultivators so far have induced plants to set seeds. Those who have, however, have succeeded in raising plants which have recently flowered and which are in every way like the parent. This would seem to dispose of any question of *P. aureata* being of hybrid origin as some originally thought it to be.

As its name implies the plant some of us are growing as *P. aureata* "form" is closely allied. You will remember that it was originally regarded as a white form of *P. Edgeworthii*. But it is very distinct from the true white form of this species. Not only are the flowers not white, but cream, but the habit is quite different from that of *P. Edgeworthii*, for it retains a compact rosette of leaves all the year round, leaves which are always heavily dusted with farina and of the same shape—tapering at the base and with short winged reddish petioles, and never with long petioles like the summer leaves of *P. Edgeworthii*. The habit is in fact exactly that of *P. aureata*. Yet the two are quite distinct, as those who have grown them side by side agree, and I think that the time has come to describe *P. aureata* form as a new species. Only occasionally does this plant form a large crown; more usually it forms a number of smaller crowns and thus should be divided frequently. As far as I know it is not readily propagated by leaf cuttings and thus differs from *P. aureata*, which *can* be propagated in this way.

The pinkish-lilac-flowered *P. bracteosa*, another LUDLOW and SHERRIFF introduction and a native of Bhutan and Assam, can also be propagated by leaf cuttings, as well as by the pegging down of the apex of the scape which produces vegetative buds. Some years ago Edinburgh

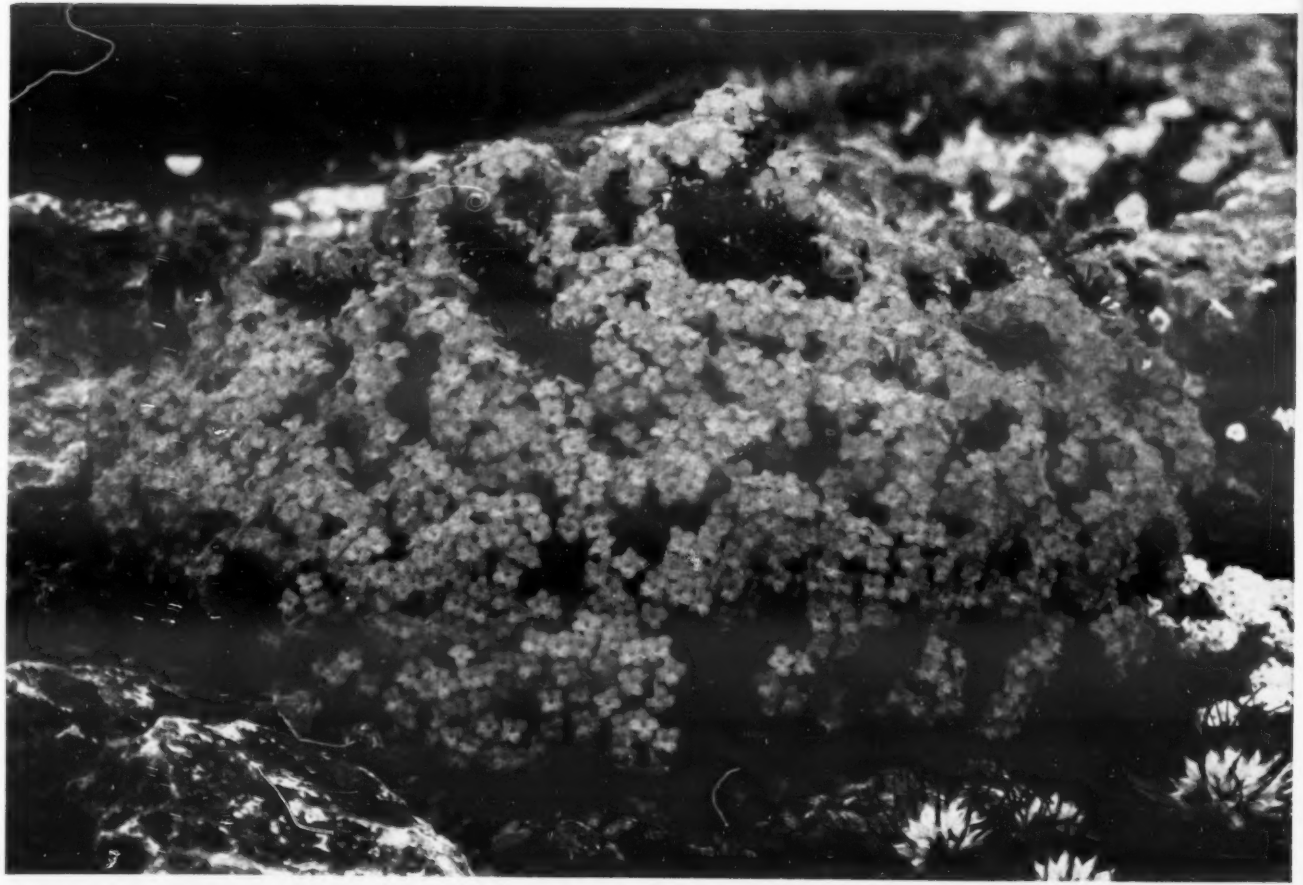

FIG. 1—*Daphne petraea*. Plant exhibited by the Six Hills Nursery, at Chelsea, 1951 (See p. 12)

Colour photograph, J. E. Downward

Photo, Gardening Illustrated

FIG. 2—*Daphne Blagayana* (See p. 15)

Photo, Sir Wm. Dunning

FIG. 3—*Daphne arbuscula* at Branklyn Garden, Perth (See p. 11)

Photo, Gardening Illustrated

FIG. 4—*Daphne Cneorum* var. ***eximia*** (See p. 10)

Photo, Gardening Illustrated

FIG. 5—

WA

PA

FIG. 6—*Selenicereus pteranthus* (See p. 28)

Photos, G. Sherriff

SOME RECENT PRIMULA INTRODUCTIONS

FIG. 7—*Primula falcifolia* (See p. 18)

Photo, Gardening Illustrated

FIG. 5—*Daphne tangutica* (See p. 14)

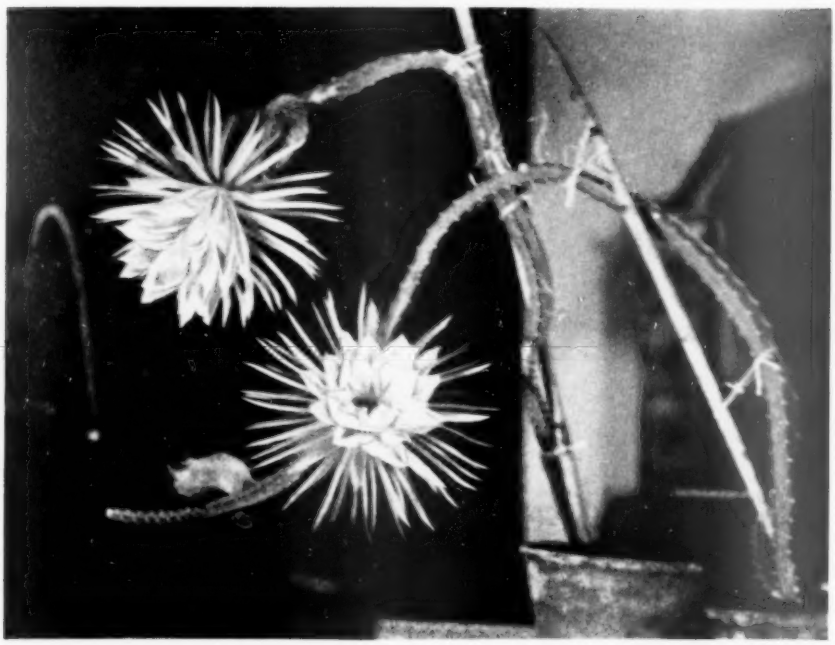

FIG. 6—*Selenicereus pteranthus* (See p. 28)

Photos, G. Sherriff

SOME RECENT PRIMULA INTRODUCTIONS

FIG. 7—*Primula falcifolia* (See p. 18)

FIG. 8—*Primula Caveana* (See p. 19)

FIG. 9—*Primula ioessa* (See p. 23)

FIG. 10—*Primula Elizabethae*
(See p. 18)

FIG. 11 — *Rosa Ecae* at Woodbridge (See p. 27)

Colour photograph by J. E. Downward

received from MR. STONOR plants of a Petiolarid Primula from the Khasia Hills which proved most amenable, and in a very short time there was a fine stock of plants available grown from leaf cuttings under the name 'Stonor No. 2.' Even from leaf cuttings this plant is remarkably variable, and the best forms are extremely beautiful with the pink flowers well over an inch across. Vegetative buds are also produced at the apex of the scape and I interpret 'Stonor No. 2' as a very fine form of *P. bracteosa*. I know that some growers do not agree with me, maintaining that it is quite different from the *P. bracteosa* as introduced by LUDLOW and SHERRIFF. But it seems to me that the variation in a group of plants raised from leaf cuttings from a parent plant is quite wide enough to accommodate the form originally introduced by LUDLOW and SHERRIFF.

But I may be wrong. The Petiolarid Primulas always have proved a troublesome group to the taxonomist and I am certain that we have not yet achieved a correct interpretation of them. I believe that the correct interpretation will be reached by a study of the plants in the field rather than in gardens, where strange things are liable to happen. For instance, let us consider the plants we know as *P. bhutanica* and *P. Whitei*. How distinct they have been in gardens. *P. bhutanica* is much the finer plant; not only is it more easily cultivated, but the flowers with their petals each usually with three large teeth are very distinct from the flowers of *P. Whitei*, the petals of which are faintly crenulate. No one who has grown the two together has ever doubted their distinct identity. But MAJOR SHERRIFF, from his experience of them in Bhutan, told me years ago that he thought they were expressions of one and the same species, and in 1949 he and LUDLOW collected plants which carried the flowers both of *P. bhutanica* and of *P. Whitei*. I should add that since he has watched the behaviour of the two in cultivation, even SHERRIFF has begun to doubt the evidence of his Bhutan specimens.

I wish there had been time to have told you more about the blue-violet-flowered *P. chamaethauma*, which discovered by WARD on the Burma-Tibet frontier in 1926, was flown home from S.E. Tibet by LUDLOW, SHERRIFF and TAYLOR in 1938, and still retains a faint hold on cultivation; or of *P. chionogenes* which came to us at the same time and from the same source; it lived in Edinburgh for some six years and two or three times produced its wonderful bright golden-yellow flowers which were as attractive to the birds as the yellow crocus.

But time permits me to mention only two other Petiolarids—both of them glorious plants. The best forms of *P. tsariensis* have large flowers of a dark velvety purple or a deep violet, in the style of *P. Calderiana*. In fact in some gardens these two species have been confused. Not only are there morphological differences however, but *P. tsariensis* usually flowers two to three weeks before *P. Calderiana* and the flowers do not have the horrid smell of those of this species. In S.E. Tibet and Bhutan, between 12,000 to 15,000 feet, it forms sheets of purple on moist hill slopes and on the banks of streams, from near the snow-line down to the edge of the bamboo forests. No success attended LUDLOW and

SHERRIFF's efforts to introduce *P. tsariensis* and its more robust variety *porecta* from seeds. Its establishment in cultivation is due to living plants being flown home in 1937–38.

P. Griffithii has been with us since 1950 when LUDLOW and SHERRIFF, from Bhutan, sent to MAJOR and MRS. KNOX FINLAY and to LORD ABERCONWAY great fat winter resting buds covered with yellow farina. These buds produced magnificent flowering plants both at Bodnant and at Keillour, and from these plants seeds have been harvested and distributed. Twice I have seen the Keillour plants growing side by side remarkably fine plants of the closely allied *P. sonchifolia* and there can be no doubt that *P. Griffithii* with its deep violet-blue, golden-eyed conspicuously annulate flowers is much the more desirable species. And judging from the ease with which seeds germinated at Wisley and the rapidity with which the seedlings have developed, *P. Griffithii* promises to be the more amenable in culture. At fruiting time the leaves develop enormously, sometimes reaching 2 feet in length and giving the plant a facies quite alien to that at flowering time.

I have not presumed to offer you advice on the cultivation of these Petiolarids which have, it seems to me, so fine a future before them. When one remembers that magnificent specimens have been grown not only in Ross-shire, Inverness-shire, Perthshire, The Lothians, Ayrshire, Northumberland, Westmorland and North Wales, where conditions are not so tremendously diverse, but also in Kent and Surrey—and even in the heart of London, it is clear that no hard and fast rules can be laid down for their cultivation. Speaking very generally, however, no matter where they are grown, sharp drainage, partial shade from the strong sun and a cool damp atmosphere, are essential.

ROSA ECAE

F. P. Knight, F.L.S.

Rosa Ecae was introduced from Afghanistan to Kew, in 1880, by DR. AITCHISON who accompanied GENERAL ROBERTS during the Afghan War.

The specific name was given to the plant by adapting the initials E.C.A. of DR. AITCHISON's wife. The original description by him appears in the *Journal of the Linnean Society* (*Botany*), Vol. XVIII, p. 54, 1880.

In cultivation *Rosa Ecae* grows into a thinly branched bush of about 6 feet in height, but if planted against a wall facing south, it will grow considerably higher than this. It forms a most attractive wall plant, and it is interesting to note that SIR FREDERICK MOORE included this in his list of plants for a south wall in The Royal Horticultural Society's JOURNAL, 1930.

In some thirty years' experience of growing this lovely Rose, I have always found it thrives best in a light, well-drained soil in full sun. The

rich golden-yellow flowers, about 1 inch in diameter, are borne singly on the tips of the red thorny shoots in May, and are sometimes followed by globose red fruits, but fertile seeds are seldom seen.

It is strange that such an attractive plant is not more frequently seen in our gardens. BEAN states it is difficult to propagate, but it can be quite successfully raised by grafting shoots of the ripened current year's wood on to root-stocks of *R. canina*, under glass, in January. The great difference between the appearance of the shoots of the briar stocks and those of *R. Ecae* makes it a very easy task to deal with any suckers which may develop.

Cuttings will produce roots, and an illustration showing rooted cuttings appears with an article I wrote for *The New Flora and Sylva*, Vol. V, p. 278. The resultant plants were, however, slow to develop.

There has been considerable confusion in the various writings on *R. Ecae*, and in more than one instance wrong descriptions have appeared. In REHDER's first volume of *The Manual of Cultivated Trees and Shrubs* (1927), p. 449, the colour of the flowers is given as pale yellow or yellowish white. DR. J. HORACE MCFARLAND makes the same mistake in *The New Flora and Sylva*, Vol. VIII, and the photograph accompanying his article is obviously not of *R. Ecae*. MR. E. L. HILLIER draws attention to this in his note in *The New Flora and Sylva*, Vol. IX, p. 64, and suggests that the plant described and illustrated by DR. MCFARLAND is *R. xanthina* var. *kokanica*, which we now grow as *R. Primula*.

Coloured illustrations appear in the *Botanical Magazine*, plate 7666, under the name of *R. xanthina* (Lindley), and also under this name in *The Genus Rosa*, by ELLEN WILLMOTT, p. 277, but on p. 278 MISS WILLMOTT refers to *R. Ecae* as the Afghan form of *R. xanthina*.

The Royal Horticultural Society's Award of Merit was given to *R. Ecae* on May 9, 1933. The plant illustrated (Fig. 11) is growing in a very dry, hot position in sandy soil against the south wall of the packing shed in The Nursery at Woodbridge.

NOTES FROM FELLOWS

The Evansia Iris

IN your September issue there was an article on Evansia Iris with a reference to the hybrid 'Paltec' (Pallidaxtectorum). I thought it might be of some interest to your Members to hear that the hybrid 'Paltec' has proved to be perfectly hardy in Montreal and is a most attractive Iris.

The type Tectorum is, on the other hand, only half hardy except in sheltered gardens, while the white form is winter killed with considerable regularity.

F. CLEVELAND MORGAN

Montreal, Canada.

Selenicereus pteranthus

This cactus originating in Mexico is very much appreciated by lovers of cacti in Europe on account of its magnificent and very big flowers. The flower buds, generally coming in May, are tightly covered with white hairs and appear to be packed in cotton wool. A few days before they open, usually in July, they grow extremely fast and on the last day they grow about 2 inches. One can really watch the growth hour by hour. Finally they will be about 9 inches long, coming out of the cover of white hairs, showing a dark claret colour.

When the points of the buds loosen it is a sign that they are opening the same evening. In the late afternoon the outer petals open more and more and at about 8 or 9 o'clock (P.M.) the inner petals will open, showing a big off-white colour flower with yellow stamens (Fig. 6). The size of the fully opened flower is about 8 inches diameter. The smell is, however, rather disagreeable and putrescent, but that is my own opinion; it may be judged quite differently by others. At about 3 o'clock the next morning the flowers begin to close, never to open again. This phenomenon occurs but once a year.

The stem of my cactus is partly four-cornered and partly five-cornered. Like most cacti they need much warmth. In giving much water they will grow very quickly, but my experience is that the flower buds drop prematurely so that this year I gave very little water indeed and was most successful.

The buds as well as the flowers are very sensitive to all kinds of insects and to handling and often refuse to flower after being touched.

The blooming of this cactus is a most exciting and mysterious adventure to observe.

JAMES DONOVAN

Sor Mill Farm,
Caerleon.

Diplacus glutinosus

Two years ago I planted in my garden here (Constantia near Cape-town) two plants of *Diplacus glutinosus*. Both of these were of the usual deep apricot colour. Last year I found that a number of self-sown seedlings had appeared. On flowering these produced flowers varying in colour from the palest apricot to a deep copper.

In the R.H.S. JOURNAL for August 1952, I note that Diplacus is grown at Wisley in the Temperate House. When I gardened in England I grew it without any difficulty in the open in my garden in Kent where in the winter of 1947 it withstood 40 degrees of frost. It was necessary to cut it to the ground each year, but it came up the following year quite happily.

As I do not remember having ever seen this plant recommended for growing in the shrub border I think that an experiment with it by those interested in sub-shrubs might produce surprising results.

F. D. LYCETT GREEN

Iris dichotoma

Iris dichotoma is the only known member of the section Pardanthopsis of the genus Iris. It is sometimes referred to as the Vesper Iris on account of the blossoms opening in the afternoon and closing or fading the same evening. It is perhaps for this reason that few people trouble to grow it.

I have now been growing and experimenting with this Iris for four years and can certainly recommend its culture to other Iris lovers. Apart from the fact that it blooms in July and August, when few, if any other, Irises are in flower, each plant has the added charm of continuing to open its flowers for a period of several weeks. This year, my first plant to flower started blooming on July 12, and buds continued to open until August 8. Other plants, which commenced to flower later, continued to open buds until the end of August.

One plant had, altogether, fifty-four blossoms opening in succession over a period of nearly four weeks.

The flowers which are about 2 inches across vary in colour from palish lavender to reddish-purple, with a central white blotch on the blade of the falls. The flower stems are some 2 feet 6 inches in height and have excellent branching.

Unfortunately the inflorescence bears so many flowers that it seems to exhaust the energies of the plant, so that it seldom makes new shoots for flowering next year.

The only way to get seed to set is by hand fertilization. I have tried crossing this Iris with other members of the genus, so far, without success. As unfertilized ovaries fall off immediately at the slightest touch, it is not necessary to mark the ovaries you have crossed, assuming they have been "selfed."

Iris dichotoma is easily grown from seed, and plants raised about March will flower the same year.

I flowered a plant last summer for the third year in succession. This plant has been weathered in a frame for the winter months and had two flower spikes, and nearly one hundred flowers this season.

C. BEDBROOK

Salvia ambigens

I see that on pages 195 and 210 in the JOURNAL for May, 1950, you say that *Salvia ambigens* was given an Award of Garden Merit in 1949. Perhaps you may like to add in a future JOURNAL that I found this Salvia in Chile in 1925 and had seed collected and sent after me. It was known as "Blue Beard" there.

An Award of Merit was given it a year or two later, and a very lovely picture of it was painted and produced in the *Botanical Magazine* (I have a copy marked 9178). Later on I was informed by a partner in a big trading company that he had come across this Salvia all down the West Coast of South America. I found it quite hardy, but took the precaution of always keeping a few plants against a wall. I gave most of the seed to Wisley.

LADY A. M. MARTINEAU

WISLEY TRIALS, 1952

BORDER CARNATIONS

One hundred and two varieties of Border Carnations were grown at Wisley in 1952. Five plants of each variety were planted on November 1, 1951 and the trial was inspected by the Joint Border Carnation and Picotee Committee of the Royal Horticultural Society and the British National Carnation Society on July 4, 1952. Their recommendations for awards are given below. The number in brackets after the description of the variety is that under which it was grown in the trial.

Pink Self

PINK MODEL. (Raised, introduced and sent by Messrs. Allwood Bros. Ltd., Wivelsfield Nurseries, Haywards Heath, Sussex.) **H.C.** July 4, 1952.—Plant vigorous with strong, rigid flower stems 20 inches long. Flowers 2½ to 2¾ inches diameter, freely produced, centre crowded; petals entire, broad, a clear pink near Porcelain Rose (H.C.C. 620/1). [30]

White Ground Fancy

LIBERTY. (Raised, introduced and sent by Messrs. Allwood Bros. Ltd.) **C.** July 4, 1952.—Plant vigorous, with rigid flower stems 23 inches long; flowers 2¾ inches diameter, freely produced, centre crowded; petals entire, broad, white ground edged and evenly marked Ruby Red (H.C.C. 827). [54]

Yellow Ground Fancy

GAVOTTE. (Raised, introduced and sent by Messrs. F. W. Goodfellow, Valley Nurseries, Aldridge, Staffs.) **H.C.** July 4, 1952.—Plant vigorous, with strong, rigid flower stems 24 inches long; flowers 2¼ to 2½ inches diameter, very freely produced, centre loose; petals entire, broad, with margins slightly incurving; ground colour Barium Yellow (H.C.C. 503/3) edged and heavily splashed Magenta (H.C.C. 27). [66].

HEARTSEASE. (Raised, introduced and sent by Messrs. F. W. Goodfellow). **C.** July 4, 1952.—Plant vigorous with slender rigid flower stems 16 inches long. Flowers 2½ to 2¾ inches diameter, freely produced, centre fairly crowded; petals narrow, with edges very finely serrated; ground colour Straw Yellow (H.C.C. 604/2) edged and splashed Magenta (H.C.C. 27). [56]

SUNSTAR. (Raised, introduced and sent by Messrs. F. W. Goodfellow.) **C.** July 4, 1952.—Plant vigorous with stout flower stems 24 inches long. Flowers 2 to 2½ inches diameter, very freely produced, centre loose; petals entire, broad; ground colour Primrose Yellow (H.C.C. 601/1) edged and slightly striped Delft Rose (H.C.C. 020). [59]

Picotee

STARLIGHT. (Raised, introduced and sent by Messrs. Lindabruce Nurseries Ltd., Freshbrook Road, Lancing, Sussex.) **C.** July 4, 1952.—Plant vigorous with slender, rigid flower stems, 24 inches long. Flowers 2¼ inches diameter, freely produced, centre loose; petals flat, broad with edges serrated; ground colour Empire Yellow (H.C.C. between 603/2 and 603/1). [97]

SWEET PEAS

One hundred and nine varieties of Sweet Peas were received for trial at Wisley. These, with thirty-seven control varieties, were sown in boxes on October 15, 1951. They were subsequently potted singly into large 60's pots and placed in cold frames for the winter months. They were gradually hardened off in the spring and planted out on March 17, 1952. The land on which they were planted had been double dug during the winter.

The trial was inspected by the Joint Sweet Pea Committee of the Royal Horticultural Society and the National Sweet Pea Society on June 17, 1952. Their recommendations for awards are given below. The number in brackets after the description of the variety is that under which it was grown in the trial.

Flowers Cream

CREAM ELEGANCE. (Raised, introduced and sent by Messrs. Dobbie & Co. Ltd., The Scottish Seed Establishment, Edinburgh, 7.) **A.M.** June 17, 1952.—Plant vigorous; flower stems 10 inches long, stiff, with four flowers evenly spaced. Flowers large, single, waved, of good substance, 2 inches diameter; buds cream opening to pale creamy white. [E.3]

Flowers Cream-Pink

REGAL. (Raised, introduced and sent by Messrs. R. Bolton & Son, Birdbrook, Halstead, Essex.) **H.C.** June 17, 1952.—Plant vigorous; flower stems 11 inches long, stiff, with four flowers evenly spaced. Flowers large, mostly double, waved, of good substance, 2½ inches diameter; Dawn Pink (H.C.C. 523) shading at edges to Dawn Pink (H.C.C. 523/2). [A.10]

Flowers Salmon-Pink

SOUTHERN BELLE. (Raised, introduced and sent by Messrs. Carters Tested Seeds Ltd., Raynes Park, London, S.W. 20.) **H.C.** June 17, 1952.—Plant vigorous; flower stems 9 to 10 inches long, stiff, with four flowers evenly spaced. Flowers large, single, slightly waved, of good substance, 2½ inches diameter; near Porcelain Rose (H.C.C. 620/1). [B.8]

Flowers Orange-Cerise

MOLLIE DUNNETT. (Raised, introduced and sent by Messrs. Carters Tested Seeds Ltd.) **A.M.** June 17, 1952.—Plant vigorous; flower stems 9 inches long, stiff, with four flowers evenly spaced. Flowers large, single, slightly waved, of good substance, 2¼ inches diameter; Geranium Lake (H.C.C. between 20/1 and 20). [C.7]

Flowers Lilac

IVOR NOVELLO. (Raised, introduced and sent by Messrs. Dobbie & Co. Ltd.) **A.M.** June 17, 1952.—Plant vigorous; flower stems 10 to 11 inches long, stiff, with four flowers evenly spaced. Flowers large, single with some double, waved, of good substance, 2½ inches diameter; near Rhodamine (H.C.C. 527/2). [F.1]

Flowers Blue

BLUE HEAVEN. (Raised, introduced and sent by Messrs. Carters Tested Seeds Ltd.) **H.C.** June 17, 1952.—Plant vigorous; flower stems 9 inches long, very stiff, with four flowers evenly spaced. Flowers large, single, slightly waved, of good substance, 2¼ inches diameter; standards Campanula Violet (H.C.C. 37/2), wings near Wistaria Blue (H.C.C. 640/1). [G.2]

GLADIOLI

Two hundred and eighty varieties of Gladioli were grown at Wisley in the trials during 1952. Twelve corms of each variety were planted on April 22, 1952. The trial was given a mulch of compost in early June and during the dry weather of July it was given frequent waterings.

The trial was inspected by a sub-committee of the Floral A Committee on July 17, 28, August 5 and 14. Their recommendations for awards are given below.

The number in brackets after the description of the variety is that under which it was grown in the trial.

Flowers White and of Cream Shades

ALEXANDER BRAILOWSKY. (Raised, introduced and sent by Messrs. N. V. Konynenburg & Mark, Noordwyk, Holland.) **A.M.** July 28, 1952.—48 inches tall; flower spike twenty-one-flowered, seven open at once. Flowers 4½ inches diameter; buds greenish cream opening to pale cream with green tinge in throat. [72]

ALTER EGO. (Raised, introduced and sent by Messrs. N. V. Konynenburg & Mark.) **A.M.** August 5, 1952.—60 inches tall; twenty-four flowers per spike with eight open at once. Flowers 4 inches diameter, pure white, buds cream. [4]

ESPERANCE. (Raised, introduced and sent by Messrs. N. V. Konynenburg & Mark.) **A.M.** August 5, 1952.—60 inches tall; twenty-four flowers per spike with five open at once. Flowers 5½ inches diameter, white with throat pale greenish cream. [24]

PALOMA BLANCA. (Raised by Messrs. Wilh. Pfitzer, introduced and sent by Messrs. N. V. Konynenburg & Mark.) **A.M.** July 17, 1952.—48 inches tall; sixteen flowers per spike with eight open at once. Flowers 5½ inches diameter, pure white with purple markings at base of throat and greenish tinge on lower petal at throat. [14]

APPASSIONATA. (Raised, introduced and sent by Messrs. N. V. Konynenburg & Mark.) **H.C.** August 5, 1952.—48 inches tall; seventeen flowers per spike with six open at once. Flowers 4¾ inches diameter, pure white with light feathering of Ruby Red (H.C.C. 827/3) at throat. [36]

CONCERTO. (Raised, introduced and sent by Messrs. N. V. Konynenburg & Mark.) **H.C.** August 5, 1952.—50 inches tall; eighteen flowers per spike with seven open at once. Flowers 4½ inches diameter, pale cream, lower petal at throat Naples Yellow (H.C.C. 403/1). [42]

MARIA GORETTI. (Raised by Messrs. H. J. Salman & Sons, introduced and sent by Messrs. P. de Jager & Sons, Heiloo, Haarlem, Holland.) **H.C.** August 5, 1952.—42 inches tall; seventeen flowers per spike with six open at once. Flowers 4¾ inches diameter, white with stripe of magenta on lower petals. [6]

PROF. GOUDRIAAN. (Raised, introduced and sent by Messrs. N. V. Konynenburg & Mark.) **H.C.** August 14, 1952.—56 inches tall; twenty flowers per spike with six open at once. Flowers 5½ inches diameter, white, cream throat with maroon markings at base. [17]

RICHARD CROOKS. (Raised, introduced and sent by Messrs. N. V. Konynenburg & Mark.) **H.C.** July 28, 1952.—54 inches tall; twenty flowers per spike with six open at once. Flowers 5¾ inches diameter, creamy white outer petals tinged Venetian Pink (H.C.C. 420), lower petals Empire Yellow (H.C.C. 603/2) with blotch of Scarlet (H.C.C. 19) at throat. [33]

SCHWABENPERLE. (Raised by Messrs. Wilh. Pfitzer, introduced and sent by Messrs. N. V. Konynenburg & Mark.) **H.C.** July 28, 1952.—45 inches tall; seventeen flowers per spike with six open at once. Flowers 5½ inches diameter, creamy white flushed pink with blotch of Dutch Vermilion (H.C.C. 717/2) at throat. [35]

WHITE EXCELSIOR. (Raised, introduced and sent by Messrs. Blom & Padding, Beverwijk, Holland.) **H.C.** August 5, 1952.—57 inches tall; twenty-four flowers per spike with seven open at once. Flowers 5¾ inches diameter, white with cream throat. [9]

Flowers of Yellow Shades

PACTOLUS. (Raised, introduced and sent by Messrs. N. V. Konynenburg & Mark.) **F.C.C.** July 27, 1952.—Described R.H.S. JOURNAL **75**, p. 32. (**A.M.** 1949). [68]

SHEHEREZADE. (Raised, introduced and sent by Messrs. N. V. Konynenburg & Mark.) **F.C.C.** August 8, 1952.—56 inches tall, eighteen flowers per spike with seven open at once. Flowers 4½ inches diameter, Amber Yellow (H.C.C. 505/3) flushed Porcelain Rose (H.C.C. 620/2), blotch of Geranium Lake (H.C.C. 20) on lower petal at throat. (**A.M.** 1950.) [67]

ACCLAMATION. (Raised, introduced and sent by Messrs. N. V. Konynenburg & Mark.) **A.M.** August 5, 1952.—Described R.H.S. JOURNAL **77**, p. 184. (**H.C.** 1951.) [45]

ARCHIMEDES. (Raised, introduced and sent by Messrs. N. V. Konynenburg & Mark.) **A.M.** July 28, 1952.—51 inches tall; nineteen flowers per spike with six open at once. Flowers 4 inches diameter, Chrome Yellow (H.C.C. 605/1) heavily flushed Shrimp Red (H.C.C. 616), three lower petals Chrome Yellow (H.C.C. 605/1) with blotch of Fire Red (H.C.C. 15/1). [69]

FORERUNNER. (Raised, introduced and sent by Messrs. M. van Waveren, & Sons, N.V., Leeuwenstein Nurseries, Hillegom, Holland.) **A.M.** July 17, 1952.—45 inches tall, fifteen flowers per spike with six open at once. Flowers 4½ inches diameter, Straw Yellow (H.C.C. 604/1). [49]

LA BATAILLE. (Raised, introduced and sent by Messrs. N. V. Konynenburg & Mark.) **A.M.** July 28, 1952.—60 inches tall, twenty-four flowers per spike with ten open at once. Flowers 5 inches diameter, Empire Yellow (H.C.C. 603/1) flushed Straw Yellow (H.C.C. 604/1) with blotch of Currant Red (H.C.C. 821/3). (**H.C.** 1950.) [46]

POLYGOON. (Raised by Messrs. H. J. Salman & Sons, introduced and sent by Messrs. P. de Jager & Sons.) **A.M.** August 5, 1952.—57 inches tall, twenty-two flowers per spike with six open at once. Flowers 5½ inches diameter, Canary Yellow (H.C.C. 2/3), lower petal at throat Empire Yellow (H.C.C. between 603 and 603/1) with small scarlet blotch. [66]

WELTWUNDER. (Raised, introduced and sent by Messrs. N. V. Konynenburg & Mark.) **A.M.** August 5, 1952.—51 inches tall; eighteen flowers per spike with ten open at once. Flowers 4½ inches diameter, Empire Yellow (H.C.C. 603/2) flushed Straw Yellow (H.C.C. 604/1) with small blotch of Currant Red (H.C.C. 821/1) on lower petal. [44]

DIAMOND. (Raised, introduced and sent by Messrs. P. Visser Cz., St. Pancras, Holland.) **H.C.** July 28, 1952.—48 inches tall; fifteen flowers per spike with six open at once. Flowers 5 inches diameter, Naples Yellow (H.C.C. 403/2) slightly splashed pale pink, lower petals at throat Barium Yellow (H.C.C. 503) flushed pink. [191]

GELBER HERCULES. (Raised by Messrs. Wilh. Pfitzer, introduced and sent by Messrs. N. V. Konynenburg & Mark.) **H.C.** August 14, 1952.—60 inches tall, twenty-one flowers per spike with seven open at once. Flowers 4½ inches diameter, Empire Yellow (H.C.C. 603/2), lower petals at throat Empire Yellow (H.C.C. 603/1). [48]

HOLLANDIA. (Raised, introduced and sent by Messrs. P. Visser Cz.) **H.C.** July 28, 1952.—45 inches tall, seventeen flowers per spike with five open at once. Flowers 4½ inches diameter, a bright yellow near Mimosa Yellow (H.C.C. 602/1). [41]

MANCHU. (Introduced and sent by Messrs. Laidlaw Gladiolus Ltd., Newquay, Cornwall.) **H.C.** August 5, 1952.—57 inches tall; seventeen flowers per spike with five open at once. Flowers 5 inches diameter, Naples Yellow (H.C.C. 403) flushed Shell Pink (H.C.C. 516) with a blotch of Vermilion (H.C.C. 717) on lower petal at throat. [65]

SEMEUR D'OR. (Raised, introduced and sent by Messrs. Blom & Padding.) **H.C.** August 5, 1952.—57 inches tall; sixteen flowers per spike with six open at once. Flowers 4½ inches diameter, Empire Yellow (H.C.C. 603/2) with blotch of Poppy Red (H.C.C. 16/1) on lower petals at throat. [53]

TUNIS. (Raised, introduced and sent by Messrs. Blom. & Padding.) **H.C.** July 28, 1952.—45 inches tall, twenty-two flowers per spike with five open at once. Flowers 4¾ inches diameter, Straw Yellow (H.C.C. 604/3) much splashed Carmine (H.C.C. 21) with blotch of China Rose (H.C.C. 024) on lower petal at throat. [188]

WHISTLER. (Raised, introduced and sent by Messrs. M. van Waveren & Sons, N.V.) **H.C.** August 14, 1952.—51 inches tall; eighteen flowers per spike with seven out at once. Flowers 4 inches diameter, Naples Yellow (H.C.C. 403/1) flushed Peach (H.C.C. 512). [185]

WUNSCHKIND. (Raised by Messrs. Wilh. Pfitzer, introduced and sent by Messrs. N. V. Konynenburg & Mark.) **H.C.** August 14, 1952.—46 inches tall; seventeen flowers per spike with eight out at once. Flowers 5 inches diameter, Straw Yellow (H.C.C. between 604/2 and 604/3) flushed pale pink, lower petal Straw Yellow (H.C.C. 604/1) with blotch of Mandarin Red (H.C.C. 17/1) at throat. [187]

Flowers of Yellowish-Orange Shades

TUNIA'S RADIANCE. (Raised by Mr. E. Both, Adelaide, S. Australia, introduced and sent by Messrs. Laidlaw Gladiolus Ltd.) **A.M.** July 28, 1952.—48 inches tall; nineteen flowers per spike with nine open at once. Flowers 5½ inches diameter, outer petals Apricot (H.C.C. 609/2) flecked Azalea Pink (H.C.C. 618), inner petals Apricot (H.C.C. 609/2) with throat of Straw Yellow (H.C.C. 604/1). [82]

Flowers of Orange Shades

ARANJUEZ. (Raised, introduced and sent by Messrs. N. V. Konynenburg & Mark.) **A.M.** July 28, 1952.—Described R.H.S. JOURNAL 75, p. 32 (**H.C.** 1949). [86]

ESPANA. (Raised, introduced and sent by Messrs. Blom & Padding.) **H.C.** August 5, 1952.—51 inches tall; nineteen flowers per spike with seven open at once. Flowers 4¾ inches diameter, cream flushed Peach (H.C.C. 712), outer petals splashed Azalea Pink (H.C.C. 618/1) with blotch of Vermilion (H.C.C. 18/1) and a streak of Scarlet (H.C.C. 19) through the centre. [73]

LUCUS CRANACH. (Sent by Messrs. Duiker Bros., Ltd., Manchester.) **H.C.** August 5, 1952.—63 inches tall; eighteen flowers per spike with five open at once. Flowers 5 inches diameter, Chinese Coral (H.C.C. 614/2) lower petals Naples Yellow (H.C.C. 403/1) at throat. [85]

Flowers of Pink Shades

ARTHUR RANK. (Raised, introduced and sent by Messrs. P. Visser Cz.) **F.C.C.** August 5, 1952.—60 inches tall; twenty-one flowers per spike with eight open at once. Flowers 4½ inches diameter, white, outer petals flushed Shell Pink (H.C.C. 516/3) inner petals very slightly tinged Shell Pink (H.C.C. 516/3) with creamy yellow throat. (**A.M.** 1950.) [95]

COTILLON. (Raised by Mr. L. W. Butt, Ontario, Canada, introduced and sent by Messrs. Laidlaw Gladiolus Ltd.) **F.C.C.** August 14, 1952.—48 inches tall, twenty-two flowers per spike with ten open at once. Flowers 5½ inches diameter, Porcelain Rose (H.C.C. 620) splashed Scarlet (H.C.C. 19) especially near the margins. (**A.M.** 1950.) [201]

POLYNESIE. (Raised, introduced and sent by Messrs. N. V. Konynenburg & Mark.) **F.C.C.** July 28, 1952.—54 inches tall, twenty-three flowers per spike with eight open at once. Flowers 4¾ inches diameter, outer petals Shrimp Red (H.C.C. 616/1) flecked Mandarin Red (H.C.C. 17), inner petals pale cream heavily flushed Shrimp Red (H.C.C. 616/1) throat deep yellow with red blotching. (**A.M.** 1950.) [93]

RENOIR. (Raised, introduced and sent by Messrs. M. van Waveren & Sons, N.V.) **A.M.** July 28, 1952.—54 inches tall; seventeen flowers per spike with six open at once. Flowers 5 inches diameter, outer petals Venetian Pink (H.C.C. 420/2) splashed Porcelain Rose (H.C.C. 620/1), inner petals Venetian Pink (H.C.C. 420/2) with blotch of Porcelain Rose (H.C.C. 620/1). [98]

ROSALIE. (Raised, introduced and sent by Messrs. M. Van Waveren & Sons, N.V.) **A.M.** July 28, 1952.—60 inches tall; sixteen flowers per spike with six open at once. Flowers 5¾ inches diameter, ground colour Carmine Rose (H.C.C. 621/3) speckled Carmine Rose (H.C.C. 621), lower petal at throat creamy yellow striped Carmine (H.C.C. 21). [174]

BRETAGNE. (Raised, introduced and sent by Messrs. P. Visser Cz.) **H.C.** July 28, 1952.—51 inches tall; twenty flowers per spike with six open at once. Flowers 4½ inches diameter, Venetian Pink (H.C.C. 420/1) with markings at throat and on margins of petals of Porcelain Rose (H.C.C. 620). [178]

CHRONIQUE. (Raised, introduced and sent by Messrs. N. V. Konynenburg & Mark.) **H.C.** August 14, 1952.—51 inches tall; nineteen flowers per spike with ten open at once. Flowers 4½ inches diameter, colour between Begonia (H.C.C. 619/1) and Azalea Pink (H.C.C. 618) with blotch of deeper red at throat. [144]

PINKIE. (Raised, introduced and sent by Messrs. Langelaan & Son, Hillegom, Holland.) **H.C.** August 14, 1952.—54 inches tall; eighteen flowers per spike with seven open at once. Flowers 5½ inches diameter, a clear shade of Azalea Pink (H.C.C. 618/1) with blotch of Vermilion (H.C.C. 18). [75]

TORSO. (Raised, introduced and sent by Messrs. P. Visser Cz.) **H.C.** August 5, 1952.—54 inches tall; twenty flowers per spike with eight open at once. Flowers 5 inches diameter, Azalea Pink (H.C.C. 618) changing to Mandarin Red (H.C.C. 17) at margins, throat Mandarin Red (H.C.C. 17). [109]

TRES JOLIE. (Raised, introduced and sent by Messrs. Blom & Padding.) **H.C.** August 14, 1952.—51 inches tall; sixteen flowers per spike with seven open at once. Flowers 4 inches diameter, a clear shade of Shrimp Red

(H.C.C. between 616 and 616/1) with blotch at throat of Mandarin Red (H.C.C. 17) ringed cream. [189]

ZEPHYR. (Raised and introduced by Mr. L. W. Butt, Ontario, sent by Messrs. Laidlaw Gladiolus Ltd.) **H.C.** August 5, 1952.—51 inches tall; twenty-one flowers per spike with six open at once. Flowers 5 inches diameter, Porcelain Rose (H.C.C. 620/1) with markings of Porcelain Rose (H.C.C. 620), lower petals Porcelain Rose (H.C.C. 620/2) with blotch of Rose Madder (H.C.C. 23) surrounded by white. [208]

Flowers of Red Shades

BROADWAY MELODY. (Raised, introduced and sent by Messrs. N. V. Konynenburg & Mark.) **A.M.** August 15, 1952.—54 inches tall; twenty-two flowers per spike with eight open at once. Flowers 5 inches diameter, Begonia (H.C.C. 619/1) splashed Vermilion (H.C.C. 18/1), lower petal at throat Amber Yellow (H.C.C. 505/1). [140]

FIRE GLOBE. (Raised, introduced and sent by Messrs. P. Visser Cz.) **A.M.** July 28, 1952.—54 inches tall; eighteen flowers per spike with six open at once. Flowers 4½ inches diameter near Vermilion (H.C.C. 18) shaded Orient Red (H.C.C. 819) at edges. [163]

MANOLETTE. (Raised, introduced and sent by Messrs. N. V. Konynenburg & Mark.) **A.M.** July 28, 1952.—54 inches tall; twenty flowers per spike with five open at once. Flowers 4 inches diameter, a bright velvety red near Vermilion (H.C.C. 18). [151]

VICTORIA. (Raised, introduced and sent by Messrs. Blom & Padding.) **A.M.** August 14, 1952.—51 inches tall, seventeen flowers per spike with seven open at once. Flowers 5½ inches diameter, Scarlet (H.C.C. 19/2) splashed Scarlet (H.C.C. 19) central vein and throat white. [228].

ARSENAL. (Raised, introduced and sent by Messrs. P. Visser Cz.) **H.C.** July 28, 1952.—48 inches tall; seventeen flowers per spike with six open at once. Flowers 5 inches diameter, Rose Opal (H.C.C. 022), outer petals deepening towards tips. [273]

ATOM. (Raised by Mr. Hedgecock, introduced and sent by Messrs. Laidlaw Gladiolus Ltd.) **H.C.** July 28, 1952.—A primulinus hybrid. 36 inches tall; thirteen flowers per spike with five open at once. Flowers 3½ inches diameter, outer petals Scarlet (H.C.C. 19), inner petals Scarlet (H.C.C. 19/1), all petals with edges pencilled white. [153]

JAN STEEN. (Raised, introduced and sent by Messrs. P. Visser Cz.) **H.C.** July 28, 1952.—42 inches tall; twenty flowers per spike with five open at once. Flowers 4 inches diameter, Mandarin Red (H.C.C. 17/2) flushed Rose Madder (H.C.C. 23/2) deepening to Carmine (H.C.C. 21/1) at edges, lower petal at throat velvety red near Currant Red (H.C.C. 821). [229]

ORANGE TRIUMPH. (Raised by Mr. C. J. de Goede, introduced by Messrs. A. G. Hulsebosch, Haarlem, and sent by Mr. John Mooy, Junior, Wilhelminapark, Haarlem, Holland.) **H.C.** August 5, 1952.—48 inches tall; twenty-one flowers per spike with six open at once. Flowers 4½ inches diameter, Vermilion (H.C.C. 18/1) deepening at margins to Vermilion (H.C.C. 18). [80]

PAUL RICHTER. (Raised, introduced and sent by Messrs. Blom & Padding.) **H.C.** July 28, 1952.—54 inches tall; twenty-one flowers per spike with seven open at once. Flowers 5 inches diameter, Vermilion (H.C.C. 18/1) marked Dutch Vermilion (H.C.C. 717/1) lower petals striped Chrysanthemum Crimson (H.C.C. 824). [193]

RED ROCK. (Raised, introduced and sent by Messrs. M. van Waveren & Sons, N.V.) **H.C.** August 5, 1952.—60 inches tall; eighteen flowers per spike with six open at once. Flowers 6 inches diameter, outer petals Geranium Lake (H.C.C. 20), inner petals Carmine Rose (H.C.C. 621) with margins flushed Geranium Lake (H.C.C. 20). [152]

RED WONDER. (Raised, introduced and sent by Messrs. P. Visser Cz.) **H.C.** July 28, 1952.—54 inches tall; fourteen flowers per spike with four open at once. Flowers 4¾ inches diameter, Signal Red (H.C.C. 719) with blotch of deep maroon at throat. [252]

SALOME. (Raised, introduced and sent by Messrs. N. V. Konynenburg & Mark.) **H.C.** July 28, 1952.—48 inches tall; nineteen flowers per spike with seven open at once. Flowers 4 inches diameter, Capsicum Red (H.C.C. 715/3) with greyish flush, lower petal at throat Chinese Coral (H.C.C. 614/1) deepening to Chinese Coral (H.C.C. 614) at edges, at base of throat blotch of brown with scarlet stripe. [119]

SAM SMITH. (Raised by Mr. E. Both, Adelaide, S. Australia, introduced and sent by Messrs. Laidlaw Gladiolus Ltd.) **H.C.** August 14, 1952.—45 inches tall; nineteen flowers per spike with seven open at once. Flowers 4½ inches diameter, a clear shade of Mandarin Red (H.C.C. 17/1) with blotch of Chrome Yellow (H.C.C. 605/2). [90]

SANS SOUCI. (Raised, introduced and sent by Messrs. N.V. Konynenburg & Mark.) **H.C.** August 14, 1952.—54 inches tall; eighteen flowers per spike with seven open at once. Flowers 6 inches diameter, very velvety intense shade of Dutch Vermilion (H.C. 717). [128]

THOMAS DEWEY. (Raised, introduced and sent by Messrs. P. Visser Cz.) **H.C.** July 28, 1952.—46 inches tall; eighteen flowers per spike with seven open at once, Flowers 4½ inches diameter, Signal Red (H.C.C. 719) shading to deep Blood Red (H.C.C. 820) at margins, white stripe on lower petal at throat. [161]

VARIETE. (Raised, introduced and sent by Messrs. N. V. Konynenburg & Mark.) **H.C.** July 28, 1952.—54 inches tall; eighteen flowers per spike with five open at once. Flowers 4½ inches diameter, outer petals Mandarin Red (H.C.C. 17), inner petals Mandarin Red (H.C.C. 17/1) with blotch of Mandarin Red (H.C.C. 17) ringed Straw Yellow (H.C.C. 604). [194]

WINSTON CHURCHILL. (Raised by Messrs. H. J. Salman & Sons, introduced and sent by Messrs. P. de Jager & Sons.) **H.C.** August 5, 1952.—54 inches tall; seventeen flowers per spike with five open at once. Flowers 4½ inches diameter, a very velvety red near Orient Red (H.C.C. 819). [126]

Flowers of Smoky-Red Shades

PRAIRIE. (Raised, introduced and sent by Messrs. N. V. Konynenburg & Mark.) **A.M.** July 28, 1952.—54 inches tall, eighteen flowers per spike with five open at once. Flowers 4½ inches diameter, a dull shade of Shrimp Red (H.C.C. 616/1) heavily flushed slate grey, lower petals at throat blotched red with a cream stripe. [279]

Flowers of Purple Shades

MABEL VIOLET. (Raised by Messrs. H. J. Salman & Sons, introduced and sent by Messrs. P. de Jager & Sons.) **A.M.** August 5, 1952.—54 inches tall; nineteen flowers per spike with seven open at once. Flowers 4½ inches diameter, Dianthus Purple (H.C.C. 730/1) deepening at edges to Dianthus Purple (H.C.C. 730). [168].

VIOLA. (Raised, introduced and sent by Messrs. van Waveren & Sons, N.V.) **A.M.** July 28, 1952.—54 inches tall; eighteen flowers per spike with six open at once. Flowers 5 inches diameter, Beetroot Purple (H.C.C. 830/3) lower petals at throat blotched with Royal Purple (H.C.C. 834/1). [268]

DAINTY. (Raised, introduced and sent by Messrs. P. Visser Cz.) **H.C.** August 5, 1952.—36 inches tall; nineteen flowers per spike with five open at once. Flowers 3½ inches diameter, Solferino Purple (H.C.C. 26/2) with feathering of creamy yellow, two lower petals creamy yellow with large blotch of Cardinal Red (H.C.C. 822). [264]

LUSTIGE WITWE. (Raised by Messrs. H. J. Salman & Sons, introduced and sent by Messrs. P. de Jager & Sons.) **H.C.** August 14, 1952.—51 inches tall; nineteen flowers per spike with six open at once. Flowers 5 inches diameter, Cyclamen Purple (H.C.C. 30/1) lightly splashed Cyclamen Purple (H.C.C. 30), with blotch of cream. [261]

VELVET DREAM. (Raised by Messrs. H. J. Salman & Sons, introduced and sent by Messrs. P. de Jager & Sons.) **H.C.** August 5, 1952.—42 inches tall; fourteen flowers per spike with six open at once. Flowers 4 inches diameter, Tyrian Purple (H.C.C. 727) heavily splashed Ruby Red (H.C.C. 827), throat Paeony Purple (H.C.C. 729). [267]

Flowers of Blue-Violet Shades

PFITZER'S SENSATION. (Raised by Messrs. Wilh. Pfitzer, introduced and sent by Messrs. N. V. Konynenburg & Mark.) **A.M.** July 28, 1952.—51 inches tall; twenty flowers per spike with six open at once. Flowers 5 inches diameter, outer petals Spectrum Violet (H.C.C. 735/2) changing at tips to Royal Purple (H.C.C. 834), inner petals Spectrum Violet (H.C.C. 735/2) throat whitish. [272]

BLUE DOMINO. (Raised, introduced and sent by Messrs. N. V. Konynenburg & Mark.) **H.C.** August 5, 1952.—51 inches tall; eighteen flowers per spike, six open at once. Flowers 5¾ inches diameter, Amethyst Violet (H.C.C. 35/2) margins splashed Bishop's Violet (H.C.C. 34/1) with purple blotch at throat. [258]

PLANTS TO WHICH AWARDS HAVE BEEN MADE IN 1952

Codonopsis convolvulacea A.M. September 23, 1952. This very attractive hardy herbaceous climber was introduced by Messrs. Ludlow & Sherriff (No. 19674) from an altitude of 9,500 feet at Bumchang, Bhutan, in 1949. The twining stems bear ovate-lanceolate evenly serrate leaves not over 1½ inch long in the cut sprays exhibited, although probably larger in the lower parts of the plant. The flower, which is borne on a long leafless pedicel, has a blue-green calyx and a cup-shaped corolla 1½ inch across the top, divided nearly to the base into five acute segments. The colour is Wistaria Blue (H.C.C. 640) and the petals are marked inside above the densely hairy base with an irregular transverse crimson band. Exhibited by W. Bentley, Esq., Quarry Wood, Burghclere, Newbury.

Rose 'Cocorico' A.M. August 26, 1952. An attractive large-flowered, semi-double, Currant Red (H.C.C. 821/1) Hybrid Polyantha variety with moderate fragrance, raised in France by M. Francis Meilland. The flowers measure 3 inches across and are produced in clusters with great freedom. The growth is compact and bushy and the dark green foliage is of medium size. The parentage is 'Alain' × 'Orange Triumph.' Introduced and shown by Messrs. Wheatcroft Bros. Ltd., Ruddington, Nottingham.

Rose 'Moulin Rouge' A.M. September 23, 1952. A brilliant crimson-scarlet hybrid polyantha variety bearing its semi-double flowers in elegant clusters. It was raised in France by M. F. Meilland and the colour is said to be non-fading. Introduced and shown by Messrs. Wheatcroft Bros., Ltd., Ruddington, Nottingham.

Rose 'Siren' A.M. September 23, 1952. A free-flowering scarlet hybrid polyantha variety bearing its flowers in clusters. It was raised in Germany by W. Kordes. Introduced and shown by Messrs. Wheatcroft Bros., Ltd., Ruddington, Nottingham.

Rose 'Tzigane' A.M. September 9, 1952. A very free-flowering slightly fragrant H.T. bicolor variety raised in France by M. F. Meilland. The inner side of the petals approaches bright claret rose with Barium Yellow (H.C.C. 503) on the reverse. It is considered to be the best bicolor for form and colour raised so far. Introduced and shown by Messrs. Wheatcroft Bros., Ltd., Ruddington, Nottingham.

Sorbus cashmiriana A.M. September 9, 1952. A very handsome Mountain Ash with panicles 3 or 4 inches across of large white or faintly pink-flushed flattish-globose berries $\frac{1}{2}$ inch in diameter. The leaf is 7 or 8 inches long and is composed of about nineteen elliptic-lanceolate leaflets up to $1\frac{1}{2}$ inch long. Except at their rounded bases these are coarsely and evenly serrate, with about two dozen teeth on each margin. Exhibited by Mr. W. J. Marchant, Keeper's Hill Nursery, Stapehill, Wimbourne.

Tripterygium Wilfordii A.M. August 26, 1952. A very vigorous climbing shrub discovered by Forrest in China in 1906 and introduced a few years later. Its narrow-ovate, long-acuminate leaves with finely-serrate margins are 4 inches long. The small and insignificant whitish flowers are freely borne in lateral and terminal panicles on the strong growths, and they are succeeded by narrow fruits about $\frac{3}{4}$ inch long, each furnished with three spreading bronzy-crimson wings. The plant presents a striking appearance when covered with fruits in late summer. Exhibited by Col. F. C. Stern, O.B.E., M.C., F.L.S., V.M.H., Highdown, Goring-by-Sea, Sussex.

Viburnum hupehense A.M. August 26, 1952. A highly decorative deciduous shrub introduced from China by Wilson in 1908. It has roundish-ovate, acuminate leaves 2 to 3 inches long and broad corymbs of creamy-white flowers followed by a heavy crop of shiny berries of the size and colour of small red currants. Exhibited by The Director, R.H.S. Gardens, Wisley.

ORCHIDS

Lycaste 'Hera' A.M. April 22, 1952. There was one open flower and one in bud in the spike. The bloom was 3 inches in diameter, the petals and sepals creamy yellow and the labellum rich gold spotted with red in the throat. The result of crossing *L. brugensis* with *L. cruenta*. Raised and exhibited by Sir W. Cooke, Wyld Court, Hampstead Norris, Newbury.

Miltonia 'Red Admiral' var. 'Petunia' A.M. 22 April, 1952. The two flowers were about 4½ inches in diameter with petals and sepals of deep claret colour with narrow white margin and white mask. The result of crossing *M.* 'H.T.P.H.' with *M. pulchra*. Exhibited by Lieut.-Col. the Hon. H. S. Tufton, Castle Hill, Englefield Green.

Odontoglossum 'Perrycare' A.M. April 22, 1952. The blooms were of good form and substance, about 3½ inches in diameter. The petals and sepals were white blotched with pale purple and the labellum was similar but with darker blotch. All were markedly fimbriate and the crest was yellow. The result of crossing *O.* 'Perryanum' with *O.* 'President Poincaré.' Exhibited by S. Tharp, Esq., 10 Farm Lane, Purley.

Odontoglossum 'Perrygan' A.M. April 22, 1952. The blooms were of good form and substance, about 3½ inches in diameter. The sepals and petals were white with purple blotches, the labellum was pure white flushed with yellow towards the centre, all were fimbriate. The result of crossing *O.* 'Perryanum' with *O.* 'Trogan.' Exhibited by S. Tharp, Esq., 10 Farm Lane, Purley.

Odontonia 'Avrania' A.M. May 20, 1952. There were eight flowers of good form and substance, each over 3 inches in diameter. The sepals, petals and labellum were purple with white markings and white fimbriate edges. The crest was yellow. The result of crossing *O.* 'Avril Gay' with *Odontoglossum* 'Ascania.' Exhibited by S. Tharp, Esq., 10 Farm Lane, Purley.

Odontonia 'Molière' var. 'Major' A.M. May 20, 1952. There were eight flowers in the spike. The petals, sepals and labellum were white blotched with lilac and had fimbriate margins. The crest was yellow streaked with red-brown. Raised and exhibited by Monsieur V. Lecoufle, Boissy St. Leger, France.

Phalaenopsis amabilis 'Lily Koster' A.M. June 24, 1952. The spike carried eight flowers of good form and substance, each about 4½ inches in diameter with pure white sepals and petals. The labellum was white with yellow side lobes and cirrhi, and the crest yellow spotted with scarlet. Exhibited by Mr. E. H. Tenhaeff, 9 Aerdenhout, Holland.

Vanda Rothschildiana var. 'St. André' A.M. May 20, 1952. The plant bore two flower spikes and a total of eighteen blooms, each about 3 inches in diameter. The sepals, petals and labellum were lilac-pink, veined and spotted with a slightly deeper shade. The result of crossing *V. coerulea*, pink form with *V. Sanderiana*. Raised and exhibited by Messrs. Sanders (St. Albans), Ltd., St. Albans.

BOOK NOTES

"Downs and Dunes." By Sir Edward Salisbury. 328 pp. Illus. (C. Bell & Sons Ltd.) 45*s*.

This JOURNAL is designed for gardeners. It is therefore from a gardener's point of view that a book will be reviewed and if a reviewer may misemploy Walpole's dictum on Kent "he leaped the fence and saw that all nature was a garden," he may thereby define his attitude to a work of natural history such as Sir Edward Salisbury has written.

We are inclined to take the English countryside too much for granted. A tree, for example, if we consider it at all, is evidence only of the miracle of its own development; we are concerned, aesthetically, with its form, the colour of its leaves or bark, or, economically with its timber. We do not think of it as a unit in a complex in which it has developed, and to the development of which it, in its turn, contributes. This development depends upon soil and climate, and, indeed, the distribution of plants according to these two factors is Benjamin Daydon Jackson's definition of ecology.

It is therefore as an ecological study that Sir Edward Salisbury's book is to be described. But it is something much more than this. Sir Edward has written an account of the development of the flora of two examples of familiar types of English countryside, but has gone far beyond the limits imposed by Daydon Jackson's definition. He has shown how the soil itself has come to be built up, and has analysed climate in the widest terms, not only of rainfall and the like, but of exposure to wind, of different wind-speeds, and of light itself where this has come to be modified by the tree-population of an area, and as a result, explains the evolution of the flora of the two habitats of which his book is a study. Furthermore, lists are provided, with biological details, of some of their most interesting and characteristic plants.

The combination of downs and dunes in one book might appear somewhat arbitrary, but, writes Sir Edward, this is "logically justified by the features they have in common, whilst their many striking differences merely tend to accentuate the significance of these resemblances." The etymologist can supply a further justification. Both the words "down" and "dune" derive from the old English root "dún" meaning a hill.

There is no pretending that this is an easy book, it is not, albeit that it is illumined by the lucid and agreeable prose style that readers of *The Living Garden* will remember with such pleasure. It is for botanists to debate its scientific minutiae. The ordinary gardener and lover of the countryside, who has tramped the downs and dunes around these islands, and who wishes to learn something of the origin and development of the plant-life he has seen, will find much in it of interest.

MORTON

"Flowering Shrubs." By Selwyn Duruz. 155 pp. Illus. (Geoffrey Bles Ltd.) 12*s*. 6*d*.

This is just the sort of book that one wishes had come into one's hands in one's earliest gardening days. It is full of valuable practical advice, stimulating ideas, and interesting incidental matter about flowering shrubs. Moreover, by to-day's standards and for a book of its quality it is published at a very reasonable price.

The nomenclature employed conforms with Rehder. This involves *Osmanthus Delavayi* having its light hidden under the bushel of *Siphonosmanthus*. In this connection attention must be drawn to the not very happily framed opening sentence of the note on *Osmanthus fragrans* on p. 83, which is capable of being misinterpreted in such a way as to raise doubts, obviously contrary to the intention of the author, as to the hardiness of *Osmanthus Delavayi*, certainly one of the least tender as well as one of the most beautiful of flowering shrubs.

The book is illustrated with 35 photographs of very high quality, some of great beauty. Their effectiveness is greatly enhanced by their not being bordered about with a white margin.

MORTON

"Plants for the Shaded Garden." By W. Barbara Acworth. 19 pp. (University of London Press Ltd.) 1*s*. 6*d*.

This short account of plants suitable for shady town gardens has been issued with the approval of the London Gardens Society. As Tom Hay points out in his

Foreword, books on gardening in London are few compared to the wealth of information available to the countryman. Miss Ackworth has made a practical contribution which will prove of real value to all faced with the peculiar problems which go with lack of sunshine and light, the pollution of the atmosphere from smoke and fogs, the dense shade from the neighbour's trees and all the other difficulties which beset the town dweller. Plants are listed under the headings of Creepers and Carpeters, Other Perennials, Shrubs, Climbers, etc., and short descriptions are given.

"Plants Indoors." By H. F. Clark and Margaret Jones. Illus. ("Architectural Review," Vol. CXI, No. 665, May 1952.) 5*s*.

This special number of the "Architectural Review" makes a valuable contribution to horticulture, for it presents in an unusually attractive form the history of the origin of the taste for indoor plants followed by two fascinating and practical chapters on their cultivation, with and without soil, outlining methods used at the Festival and in Scandinavia and the United States, where the popularity of indoor plants in both domestic and civic architecture has been much more highly developed than in this country.

The bulk of the article is a discussion of the species with information as to their history, culture, propagation and particular idiosyncracies. Minimum temperatures are given, the amount of sunlight required at different seasons of the year and even a note of those plants which will stand the fumes of gas, so lethal to most house plants. Numerous photographs and charming coloured drawings of great style illustrate the different uses of indoor plants in the various countries. This article fortunately will be produced in book form but meanwhile the "Architectural Review" presents it admirably.

"Principles of Weed Control." By G. H. Ahlgren, G. C. Klingman and D. C. Wolf. 368 pp. Illus. (Chapman & Hall.) 44*s*. net.

The problem of weed control is one which involves the husbandman, the soil scientist, the botanist, the plant physiologist, the ecologist and the chemist. This is because the possible lines of attack upon the unwanted plant are so many; it may be killed mechanically, starved out, crowded out, asphyxiated, drowned, poisoned or even killed by over-feeding or over-stimulation. Each weed presents its own problem, each crop its own complex of difficulties; a weed which may be easy to destroy in one soil or environment may present great difficulties in another, involving an entirely different technique.

Until the coming of the scientific approach to the weed problem, methods of dealing with these gardeners' and farmers' nightmares resolved themselves mainly into two types; control by mechanical means such as ploughing and hoeing, and control by poisoning with such drastic chemicals as cresylic acid or arsenical compounds. The scientific study of weed control, and especially of control by chemical means, may be said to have begun only after the First World War and to have gathered impetus at an ever-increasing rate, most particularly since 1945. The discovery, during the war but published after, that the synthetic plant growth substances, or hormones, known for their usefulness in regulating many phenomena of plant growth, could be used to kill plants by a kind of over-stimulation, opened entirely new fields. The large differences in susceptibility to the action of these potent compounds shown by plants of different kinds brought much nearer the gardener's dream of a chemical substance which would kill the unwanted weed and yet leave unharmed the crop plant.

In this book the authors have brought together the underlying principles, the up-to-date facts and the control techniques of the comparatively new science. Much that has been available only in original papers in scientific journals is presented and though a great deal of the substance is highly technical, yet the non-technically minded can obtain all the latest data on control methods without difficulty.

It is unfortunate that, as in so many American books, the implication is that practically all the work on weed control, especially by chemical means, has been done in the U.S.A. The work of Blackman at Oxford and of Templeman at Jealott's Hill is virtually ignored and almost without exception the references are to Americal journals and bulletins. Apart from this, the book will prove of great value for its comprehensive survey of all aspects of this important problem.

R. H. STOUGHTON

"The Taxonomy of Vascular Plants." By George H. M. Lawrence. 823 pp. Illus. (MacMillan Company, New York.) 60*s*.

There has been a considerable renewal of interest in recent years in the subject of plant classification. This is partly due to a widening recognition of its basic importance to all who work with plants, whether in theory or in practice, and partly to the use by taxonomists of new criteria and methods in addition to those that have long been orthodox. Consequently there is a need for up-to-date textbooks that incorporate the new data and explain the modern outlooks.

Professor Lawrence gives us a compact, well-written, and conveniently produced book that is full of valuable information. In it he deals with the aims of and taxonomy, the history, principles, and methods of classification, and provides factual accounts of selected families of vascular plants. It is true that the book is primarily intended for students in North America, and some of the chapters, as that dealing with the geography of vascular plants, have an obvious bias in favour of the northern part of the New World, but it may be particularly recommended for general use as a critical introduction to a world-wide subject in so far as methods and principles are considered and as a work of reference so far as the descriptive accounts of families are concerned. It will be very useful to many students to have available the lists of literature references at the ends of chapters and following family descriptions. The 322 black and white text figures and the unusually comprehensive yet simple illustrated glossary of taxonomic terms are also valuable features. The discussions of such subjects as the relation of taxonomy to phylogeny and the rôle of experiment in taxonomy are fair and unusually well balanced.

W. B. TURRILL

"Gardens." By Sir William Beach Thomas. 302 pp. Illus. (Burke Publishing Co. Ltd.) 21*s*.

Sir William Beach Thomas has assembled in this volume pieces of prose and poetry chosen from ancient and modern literature on almost every conceivable aspect of gardens and gardening. Of this horticultural anthology we may quote with unprecedented literalness Montaigne's well-known words: "I have gathered a posy of other men's flowers and nothing but the thread that binds them is my own." On this occasion the thread is of considerable distinction, being the critical and discriminating connective passages which Sir William Beach Thomas has himself provided to link the book together.

Supporters of the *Botanical Magazine* will protest at even four years being lopped off the lifetime of this most remarkable of periodicals, which was first issued in 1787 and not, as stated on p. 108, in 1791. Neither are they likely to appreciate any portion of it being described as "quaint." However, it has to be admitted that these details detract but little from a very enjoyable book.

MORTON

"Chrysanthemums." By Frank Kyle. 192 pp. Illus. (Ward Lock & Co. Ltd.) 15*s*.

One might suppose the Chrysanthemum to be the favourite English flower from the number of books published about it, and if there is still room for another this should fill it. It is, the Secretary of the National Chrysanthemum Society assures us in his preface, entirely different from many published hitherto in that its author is expert in imparting knowledge being schoolmaster by profession, in addition to which he is an amateur Chrysanthemum grower of great experience. Certainly he has set out his information very clearly, and it is extremely comprehensive.

The numerous illustrations are an important part of the book, and demonstrate in a very clear way many of the operations involved in Chrysanthemum culture.

MORTON

"Journal of Experimental Botany." (O.U.P.) 16*s*. 0*d*. per part.

This is the official journal of the Society for Experimental Botany and is edited by Prof. T. A. Bennet-Clark. The latest part to reach us is that for June 1952 being Number 8 of Vol. 3. As might be expected it contains a number of both important and interesting papers of a high standard, although the majority of the matters discussed are probably of more interest to the plant physiologist and biochemist than of direct use to the gardener.

P. M. SYNGE

"Spotting British Birds." By S. Vere Benson, M.B.O.E. 231 pp. Illus. (Frederick Warne & Co., Ltd.) 17*s.* 6*d.*

This delightful book is designed to help the amateur bird-watcher whether he be at home, in his garden, on the moors, in the mountains, in the forest, or by the sea. There are chapters as well on some of those amazing islands off the coast which are the haven of so many birds of a less familiar nature, and these were written with a more knowledgeable reader in mind. Not only are birds identified by their descriptions but by their songs, habitats, type of food and method of flight. Delightful anecdotes enliven the text and reasons for the common names are given. For example, the Storm-Petrel, which I have so often watched following the steamer in peace-time and even convoys in war, is so named for the reason that follows. "Sometimes flying low, a bird drops its feet and patters on the surface, and it is this curious habit which earned it the name 'Petrel,' an allusion to St. Peter walking on the waves."

This volume is well illustrated with half-tone plates and over a hundred line drawings by the author. A recurring theme throughout is that of bird preservation. Certainly one of the most effective means is to arouse an interest and a love of bird life. This the author has done. LANNING ROPER

"Elementary Genetics." By Wilma George. 171 pp. Line drawings. (Macmillan & Co. Ltd.) 10*s.* 6*d.*

The author says in the Preface that "it is easier to understand classical Mendelism having acquired a knowledge of the mechanics of cell-division than it is to make a frontal attack on Mendelism." So the book begins with a clear exposition of the cell theory. There is no doubt that the union of Genetics and Cytology has become so intimate that these two disciplines cannot be studied one without the other.

The later chapters give a good description of "Linkage and Crossing over," "Sex Determination" and "Mutation" illustrated by studies made with the useful fruit-fly Drosophila.

The chapter on the "Changes of the Chromosomes" show how the structural changes in the chromosomes may alter the arrangement of the genes and the effect of changes which take place under polyploidy; the latter is much more common in plants than in animals. The close correlation between genes and chemical substances is an interesting, but by no means elementary chapter in which is given a short description of the genetics of the blood groups in man.

The importance of chromosomes as a unit in taxonomy is touched on and the last chapter on "Genetics and Evolution" is full of information which will make those interested want to read some of the books enumerated in the short but useful bibliography.

This book will be useful to students who begin their work on Genetics. It is well printed and the technical terms are given their derivations which will make them easier to remember.

"Nature Interlude—a book of natural history quotations." Compiled by E. F. Linseen. 256 pp. (Williams & Norgate, Ltd.) 12*s.* 6*d.*

This anthology is the first of its kind based entirely on quotations dealing with natural history. In an age when life does not permit the wide reading of the classics as in the past such a book makes possible a familiarity with some of the delightful quotations through the centuries. These are grouped for convenience by subject, the headings ranging from animals, birds, fish, insects and molluscs to fruits, plants, trees and shrubs. In this way it is an easy book for reference but primarily it is a delightful book in which to browse.

I could not help a feeling of awe as I considered the vast amount of reading which the author has done, both widely and well, in order to gather together such delightful selections from sources ranging from *The Bible* to Shakespeare and the daily journals. *Nature Interlude* is a book to pick up at an odd moment. It is a book for travelling and for the bedside table. It is a book to carry one away from the problems of contemporary life into the realm of great literature and the best of all possible worlds, the world of trees and flowers and birds and beasts. LANNING ROPER

"Plantes Grasses." By A. Bertrand. 8vo. 124 pp. Illus. Published by La Maison Rustique, 26 rue Jacob, Paris (IV°). Fr. 910, including postage.

In recent years the interest in the growing of succulent plants has greatly increased in France and M. Bertrand's earlier book (*Cactées*, 1949, in collaboration with Dr. A.

Guillaumin) will have helped to foster that interest. Now comes *Plantes Grasses* from the same author, a companion volume in format and style of illustration, covering the other plant families in which succulence is found. It begins with a chapter on the natural habitats of succulent plants, followed by methods of cultivation and propagation, which give sound advice though the fact that some types grow in winter and need to be rested during the summer months does not seem to be sufficiently emphasized. The rest of the book is occupied by descriptions of the main genera, grouped together in the plant families to which they belong; under each is given a good selection of species that are likely to be obtainable, with descriptions and notes on special points of interest. From the botanical point of view the book is sound even if the author does not accept all the latest recommendations such as the conversion of the comprehensive genus Mesembryanthemum into the family Mesembryanthemaceae that, as he mentions, has recently been proposed. The many illustrations will be a great help to the beginner unfamiliar with this type of plant; the 23 colour plates are good on the whole, though there is the not uncommon tendency for the greens to be rather too blue, but the 40 black and white illustrations are excellent. This book is a useful addition to the literature on the cultivation of succulent plants for anyone who reads French.

VERA HIGGINS

"Leaf Analysis." An Authorized Translation by R. L. Mitchell of Dei Blattanalyse by H. Lundegardh. viii + 176 pp. (Hilger and Watts, London 1951.) 22s. 6d.

Cultivators of plants whose crops exhibit poor or indifferent growth frequently conclude that the cause of the trouble is malnutrition. If it can be clearly established that pests, and diseases caused by fungi or viruses, are absent, and that the plants are adequately supplied with water, then it is a fairly safe conclusion that something is wrong with the available supplies of food. It is still widely, but erroneously, held that all that is then necessary is to submit a sample of the soil (all too frequently one that is small and quite unrepresentative of the area concerned) for chemical analysis, and to apply such fertilizers as are necessary to make good any deficiencies thus revealed. While chemical analysis of the soil may well yield data of considerable value, and even point to an obvious remedy, it is becoming increasingly clear that, for various complex reasons, the mineral foodstuffs in the soil are not necessarily taken up by the plants growing on it. One may, in fact, see symptoms of mineral starvation in plants on soils that exhibit no obvious deficiencies when they are analysed by chemical means. For this reason, many plant physiologists believe that the state of a plant's nutrition can be more accurately assessed by making a chemical analysis of a selection of its leaves. This is not always so easy as it sounds, because the chemical composition of a living plant is constantly changing, and special methods have had to be devised for overcoming the difficulties that arise through this cause. The author of this book, who has studied the problems involved over a long period of years, published his all important conclusions in 1945, in a German edition of the book under review, but the German text is no longer available in Western Europe. To fill the gap which has thus arisen, an English translation has now been produced from a manuscript revised by the author up to December 1946.

The book comprises three chapters. Of these Chapter I is entitled " Scientific Principles of Leaf Analysis," Chapter II " Practical Basis of Leaf Analysis " and Chapter III " Application of Leaf Analysis to the Determination of the Manurial Requirements of the Soil." There are numerous tables and graphs to illustrate the text. While the book is one that will doubtless be welcomed with enthusiasm by specialists, the subject matter will be found to make difficult reading for those who have no knowledge of physics and chemistry. A large proportion of the book is concerned with leaf analysis by spectrographic methods for which special equipment is required. The book ends with a bibliography of 160 original articles, followed by separate indexes to authors and subjects. Botanists, and especially plant physiologists, owe a debt to the author and the translator for having made this important thesis readily available in the English language.

C. R. METCALFE

"Beekeeper's Handbook." By Herbert Mace. 256 pp. Illus. (Ward, Lock & Co. Ltd.) 21s.

For its moderate size and price this is a very sound and comprehensive book for the amateur or for the would-be professional beekeeper. It has skilfully condensed paragraphs on almost every aspect of the craft, with a good index and bibliography. The

type and general presentation are excellently clear and there are numerous well-chosen photographs and diagrams.

A few criticisms can naturally be offered. The section on honey sources is very short, but even so we should like to see more emphasis placed on the effect of different soils on nectar secretion. Thus Limes, which yield abundantly on heavy soils, like the London Clay, are of little use to bees on light or chalky soils; while the exact reverse is true of buckwheat. White clover needs chalk or limestone to give best—and so on.

The section on Honeydew contains definite errors, for this may be produced by insects as well as by plants; it is not necessarily dark in colour and some kinds produce a very palatable honey.

R. M. DURUZ

"Die Laubgehölze." By G. Krüssmann. 2nd ed. vii + 402 pp. Illus. (P. Parey, Berlin.) 33.60 DM.

This book is a descriptive list, alphabetically arranged, of the trees and shrubs (conifers excluded) hardy in Germany. It enumerates 5,850 species, varieties and hybrids, whereas the first edition, published in 1937, dealt with 2,150. The descriptions are concise but indicate significant features and the nomenclature has mostly been brought into line with Rehder's *Manual of Cultivated Trees and Shrubs*, 2nd ed. (1940). It is thus a pity that *Clerodendrum Bungei* should be listed as *C. foetidum*, Aucuba as Aukuba and *Akebia trifoliata* as *A. lobata*, the names used in Rehder's 1937 edition. However, these and a few other failures to adopt the correct name detract but little from the general value of the book as a convenient and reliable reference work, likely on account of its alphabetical arrangement to be of especial value to nurserymen preparing catalogues of trees and shrubs. It includes a large number of garden forms, e.g. 40 of Chaenomeles, 51 of *Calluna vulgaris*, 57 of *Paeonia suffruticosa*, and comparatively new plants, e.g. × *Mahoberberis aquicandidula*, × *M. aquisargentii*, *Viburnum* × *bodnantense* 'Dawn'; pains have obviously been taken to make it comprehensive and up to date. Before the war the author was dendrologist to the renowned Baumschule L. Späth at Berlin; he is now head of the Zentralstelle für Gehölzsichtung at Dortmund.

W. T. STEARN

"Second Annual Report—1951." The National Vegetable Research Station, Wellsbourne, Warwick. viii + 83 pp.

This report is an interesting document as it records the rapid growth of this very useful organization in its second year. In addition to the report of Dr. J. Philp, the Director, there are informative papers describing the research done by various members of the Staff on such varied subjects as insect control, rotation of crops, manurial treatment of vegetables, watercress investigations and a detailed summary of weather conditions in 1951.

"Some Crop Protection Problems in World Agriculture." Report of the International Conference held at Fernhurst Research Station. 116 pp. Illus. (Plant Protection, Ltd.).

The account of this important international conference with a foreword by T. Ainslie Robertson, Chairman of Plant Protection Ltd., contains a series of valuable papers with the ensuing discussions at the different sessions.

The papers include such interesting subjects as *Wastage of World Food Supplies through Pests and Diseases*, delivered by Sir John Russell at the first session, *Synthetic Organic Insecticides—Their Value and Limitations*, *Control of Plant Virus Diseases*, and *Factors Limiting Crop Protection Progress*. The discussions among the international delegates present fascinating material. This very handsomely produced report contains material of vital interest to the serious minded citizen of every country and every walk of life.

LANNING ROPER

"Stourhead, Wiltshire" and "The Garden at Bodnant, Denbighshire." 24 pp. each. Illus. (Country Life.) 2*s*. 6*d*. each.

These two booklets are part of the series, *National Trust Properties in Pictures*. The texts, little more than a page in length, are limited to bold sketches of the history and certain features of these fine estates. On the whole, the impression is gained that the writer is more interested in architecture and history than in the living gardens themselves. It is to be regretted that a factor like the mild climate at Bodnant which makes possible the unique collection of rare and tender plants is not mentioned or that features such as the Asiatic Primulas, the Embothriums, the Rhododendron

hybrids raised there or the wonderful beds of Gentians are not listed with the approximate time of flowering. At Stourhead, although admittedly the house and the architectural features of the garden are superb, certainly the beauty of the autumn colouring and the burst of bloom of the Azaleas and Rhododendrons in spring deserve comment. Both booklets are copiously illustrated with lovely views and I venture to say that any garden lover who sees them will try to plan a visit.

LANNING ROPER

"A Synopsis of the World Literature on the Fruit Tree Red Spider Mite, Metatetranychus almi (C. by Koch 1835) and its Predators." By Joan R. Groves, B.Sc. With a brief review of the problem by A. M. Massee, D.Sc., F.R.E.S. 179 pp. (The Commonwealth Institute of Entomology.) 20*s*.

This book is produced for the special use of all research workers wherever deciduous fruit trees are grown and wherever the Fruit Tree Red Spider Mite is a pest. One thing revealed by the preparation of this work is the non-occurrence of the species in South Africa.

Since 1944 the staff of the ACE—Pettar—A.R.C. Fruit Tree Red Spider Mite Field Laboratory have been doing good work at Great Braxted. During this period Miss Groves has patiently searched the literature of the world for references to the species.

It was first described in 1835 and this volume deals with over 1,000 publications up to early 1948. The abbreviations for the titles of journals, etc., are those adopted in *A World List of Scientific Periodicals*, 2nd edition, London, Oxford University Press, 1934.

The bibliography is divided into two parts, the first relating to the mite (821 references) and the second to predators (218 references). A valuable addition is the brief summary of each paper under the headings:—Systematics, Bionomics, Dispersal, Distribution, Hosts, Varietal Resistance, Damage, Culture, Weather, Control and Technique.

A good index is provided covering both parts of the bibliography, and another pleasing feature is the list of synonyms and popular names. On pages 3–7 there is a "Brief Review of the Problem" by Dr. A. M. Massee. This is an admirable survey of the position to-day of a pest which has very markedly increased in recent years. This in itself adds further interest in the multitude of papers listed in the book.

Miss Groves is to be congratulated on her patience and industry. It is a type of work to be highly commended, one which is badly wanted for all the principal pest species in order to avoid much duplication of effort and so speed up further research.

A. ROEBUCK

"Narcissus Culture." Bulletin No. 44. Min. of Agric. 2nd ed. 1951. iv + 39 pp. Illus. (H.M.S.O.) 2*s*. 6*d*.

At the invitation of the Flower Group of the N.A.A.S. under the Chairmanship of Professor R. H. Stoughton, Mr. H. W. Abbiss has prepared this interesting bulletin dealing with the production of Narcissus bulbs from the point of view of both the commercial flower grower and the bulb grower. All angles of the subject are treated, including Narcissus classification, lists of recommended varieties, bulb structure, planting, soil preparation, marketing, the warm-water treatment of bulbs, etc. Of special interest is the Appendix with local practices in the important bulb areas of Britain.

"The Cultivation of Decorative Plants." Part II, Pot Plants. By Richard Maatsch. 114 pp. Illus. (Paul Parey, Berlin and Hamburg.)

This second part of the publication, which is intended for the guidance of young Nurserymen, begins with some general remarks on soils, the use of manures and fertilisers and deals also with methods of combating plant diseases. These introductory remarks are followed by details of the treatment of some 17 plants more commonly raised by nurserymen for sale as pot plants. They include Begonias, Cyclamen, Poinsettia, Primula, Fuchsia and their various varieties. Then follows a detailed account of their cultivation and propagation together with a statistical account of the time taken to bring the plants to a mature and saleable condition. The procedure involved is represented by a series of ingenious diagrams. Though the information given is intended for German gardeners a good deal of the cultivation is of course applicable to British horticulture, but English horticulturists may prefer different species and varieties.

F. E. WEISS

"Grape Growing and Wine Making." By S. M. Tritton, M.P.S., F.R.I.C. 32 pp. Illus. (The Grey Owl Research Lab., Almondsbury, Glos.) 5*s*.

This little book will serve a useful purpose for those people who are now starting to make wine. While the first section on vine growing is rather too brief for most gardeners to get much benefit, the remainder gives a very lucid and full account in simple language of methods for making wine. It will be particularly valuable for those wishing to revive some of the arts of wine making from our other suitable fruits, and gives useful tables for the necessary treatments of the juices. It does much to dispel the idea that very elaborate precautions are necessary to make wine and may encourage readers to make the attempt.

"House and Garden Book of Gardens." No. 1. Reprinted from "House and Garden." 84 pp. Illus. (The Conde Nast Publication Ltd). 5*s*.

This handsome illustrated volume, containing many photographs as well as eight pages of coloured plates and numerous charming line drawings, is compiled from the best of the material that has appeared in *House and Garden* in the last six years. There are views of some of the great gardens of England including Sissinghurst, Bramham and Hidcote and delightful camera studies which show the real beauty of such interesting plants as *Salvia argentea alpina*, *Vitis Henryana*, *Veratrum nigrum* and *Euphorbia Wulfenii*. Polls indicate the choices of experts in the field of shrubs, roses, and fruit. Practical articles by leading writers deal briefly but graphically with varied topics including the Lily pond, uncommon vegetables, the compost heap, gardens under glass and the herbaceous border. The photography, copy and make-up set a high standard for future numbers.

LANNING ROPER

"The Rose. A Quarterly Journal for Rose Lovers." Autumn 1952. Vol. I, Part 1. Bertram Park, Editor. 70 pp. Illus. (Whitefriars Press). 2*s*. per copy. Annual subscription 8*s*. 6*d*. Canada and U.S.A. $1.50 postage free.

The appearance of this new publication will be of interest to Rose growers throughout the country and abroad. The material for this first issue strikes a seasonal note with the article by the Editor entitled Plan and Plant for Colour, and Mr. A. Norman's lucid exposition, Start Planting Now, which outlines planting procedure from the preparation of the soil to the final treading and staking. Two delightful descriptive articles weigh the merits of the best of the newer and the older varieties, the former being illustrated by successful colour plates of 'Fred Howard,' 'Grand'mère Jenny' and 'Tzigane.' Mr. H. Edland describes the aims of the N.R.S. Rose Trials and Graham S. Thomas writes in praise of decorative foliage.

LANNING ROPER

"Amateur Gardening Annual, 1953." Edited by A. G. L. Hellyer. 136 pp. (Amateur Gardening). 5*s*.

The subtitle, "A preview of the Year's Work in Garden, Orchard and Greenhouse," gives a splendid insight into the wide range of material which has been gathered together in what is certainly a competent and rewarding volume at so low a price. The fifty-four short articles are written by some of the best known figures in English horticulture and the subjects touch on almost every phase of popular gardening. As pointed out in Mr. Hellyer's Foreword, the article on Royal Gardens focuses interest where it so rightly belongs in a Coronation Year. Twenty-two whole page plates and a quantity of smaller ones add enormously to the interest. Particularly delightful are the groups of three hardy flowering plants which illustrate each month of the year, starting with *Hamamelis mollis*, *Cyclamen coum album* and *Viburnum foetens* for January, and ending with *Mahonia Bealii*, *Helleborus niger* and *Jasminum nudiflorum* for December.

ERRATUM

Wisley Trials, 1952—*Dianthus*

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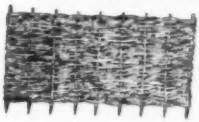

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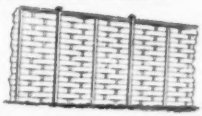

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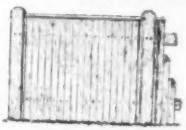

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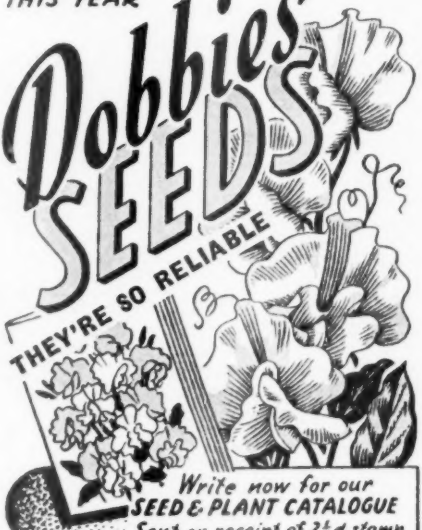

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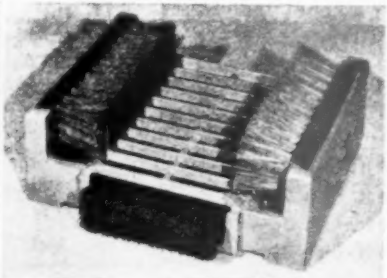

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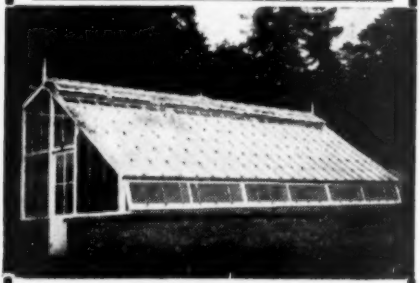

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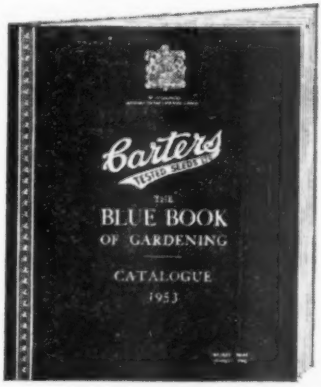

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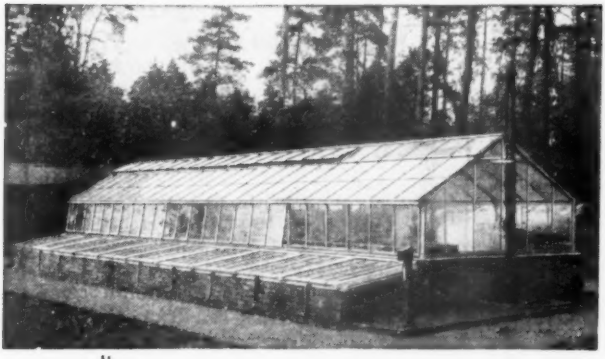

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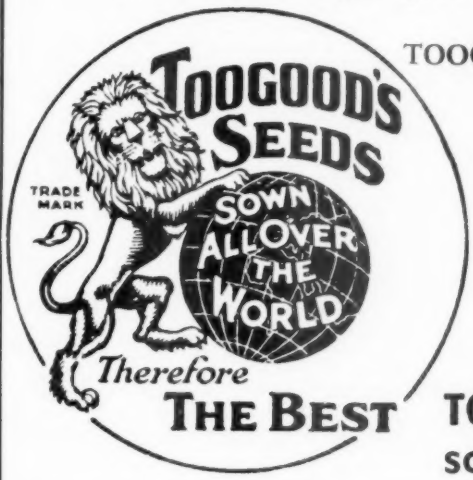

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To George Forrest and his collectors we owe a very large number of the fine plants introduced from Western China, Upper Burma and Eastern Tibet, which have made so great an addition to our gardens in this century. Forrest travelled and lived in China almost continuously from 1904 to 1931 and had many adventures, particularly on his early journeys. It is fitting that we should pay tribute to him in this book, produced under the editorship of Dr. J. M. Cowan of the Edinburgh Botanic Garden. This book contains a personal account of the collector by Sir William Wright Smith, F.R.S., Regius Keeper of the Edinburgh Botanic Garden; an account of his journeys by E. H. M. Cox, who himself travelled with Farrer; chapters on Rhododendrons and Primulas by Dr. Cowan and Dr. H. R. Fletcher respectively, and shorter sections on all the other main genera in which Forrest collected notable plants. It should be interesting to all keen gardeners to read of the conditions under which many of their plants grow in the wild. There are 85 monochrome illustrations, many of great beauty and printed in gravure with great care, and these include many photographs taken by Forrest himself of the plants in their natural habitats. There are also five colour plates showing some of his most outstanding introductions which include such plants as *Gentiana sino-ornata*, *Rhododendron Griersonianum*, *Primula malacoides* and *Pieris Forrestii*.

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